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IDENTIFIERS	Future Farmers of America

ABSTRACT

This curriculum guide includes teaching packets for 21 problem areas to be included in a core curriculum for 10th-grade students enrolled in a rural agricultural program. Covered in the four units included in this volume are orientation to agricultural occupations (orientation to vocational agricultural course and developing effective study habits); leadership and citizenship (participation in activities of the Future Farmers of America); supervised occupational experience (summarizing and analyzing records and estimating income and expenses for crop and livestock projects); and livestock science (advanced feeding and caring for livestock, providing housing and equipment for livestock, and judging meat and livestock products). Each problem-area packet includes some or all of the following components: suggestions to the teacher, teacher's guide, information sheet, student worksheets or assignment sheets and key, demonstrations, job sheets, transparencies, discussion guide for transparencies, and sample test questions and teacher's key. (MN)

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CORE II MATERIALS FOR RURAL AGRICULTURE PROGRAMS

Units A-D

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Product Abstract

1. Title of material Core II Materials for Rural Agriculture Programs
2. Date material was completed June, 1982
3. Please check one: New material _X_ Revised ____
4. Orginating agency University of Illinois

   Address Urbana, Illinois Zip Code 61801
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7. Subject Matter (Check only one according to USOE Code):

   USOE Code

   _X_ 01 Agricultural Education
   ____ 03 Business and Office Education
   ____ 04 Distributive Education
   ____ 07 Health Occupations Education
   ____ 09 Home Economics Education
   ____ 10 Industrial Art Education
   ____ 16 Technical Education
   ____ 17 Trade and Industrial Education
   ____ Career Education
   ____ Other (Specify) ____

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8. Education Level:

   ____ Pre-K Thru 6 ____ 7-8 _X_ 9-10 ____ 11-12
   ____ Post-Secondary ____ Adult ____ Teacher (Pre-service)
   ____ Administrator (Pre-Service) ____ Other (Specify) ____

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9. Intended for Use By:

   _X_ Student _X_ Classroom Teacher ____ Local Administrator
   ____ Teacher Educator ____ Guidance Staff ____ State Personnel
   ____ Other (Specify) ____

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10. Student Type:

    _X_ Regular _X_ Disadvantaged _X_ Handicapped
    ____ Limited English Proficiency ____ Other (Specify) ____

11. Medium and Format of Materials:

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16. General Description (State the general objective and suggested method in use. Summarize the content and tell how it is organized. Continue on back of this sheet or on another sheet, if necessary.)

This curriculum guide includes teaching packets for 21 problem areas selected as suggested areas of study to be included in a core curriculum for tenth-grade or seond-year students enrolled in a rural agriculture program.

17. Person Completing this Abstract: Paul E. Hemp

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LIST OF UNITS AND PROBLEM AREAS

RURAL AGRICULTURE PROGRAM

CORE II

UNIT A: Orientation to Agricultural Occupations

PROBLEM AREAS:

1. Orientation to vocational agriculture course and SOEP
2. Developing effective study habits

UNIT B: Leadership and Citizenship

PROBLEM AREAS:

1. Participating in individual and group activities in the FFA
2. Developing leadership skills

UNIT C: Supervised Occupational Experience

PROBLEM AREAS:

1. Summarizing and analyzing records
2. Estimating income and expenses for crop and livestock projects

UNIT D: Livestock Science

PROBLEMS AREAS:

1. Advanced feeding and caring for livestock
2. Providing housing and equipment for livestock
3. Judging and evaluating meat and livestock products

UNIT E: Crop Science

PROBLEM AREAS:

1. Harvesting farm crops
2. Growing small grains

UNIT F: Soil Science and Conservation of Natural Resources

PROBLEM AREAS:

1. Understanding soils
2. Judging land-use capability
3. Buying and using fertilizers

UNIT G: Horticulture

PROBLEM AREAS:

1. Identifying trees, shrubs, and flowers
2. Propagating plants sexually and asexually
3. Growing and caring for indoor plants

UNIT H: Agricultural Mechanics

PROBLEM AREAS:

1. Developing arc welding skills
2. Developing acetylene welding skills
3. Surveying in agriculture
4. Developing basic shop skills

7

SUGGESTIONS FOR USING CORE MATERIALS

These instructional materials and teaching aids have been designed to improve instruction and increase student learning. Each problem area packet includes some or all of the following components:

1. Suggestions to the teacher
2. Teacher's guide
3. Information sheet
4. Student worksheets or assignment sheets and key
5. Demonstrations
6. Job sheets
7. Transparencies
8. Discussion guide for transparencies
9. Sample test questions and teacher's key

This combination of instructional materials is intended for use as a source unit. This means that teachers should selectively choose those components and those parts which they need to achieve their teaching objectives. The project staff does not recommend that teachers "teach" the core program as it is presented. Instead, teachers should personalize and localize the materials for the particular group taught and, wherever possible, add other materials and teaching techniques to enrich the core program.

Teachers could teach all problem areas included in the core curriculum to a specific class, but this would not be advisable considering the variations which exist in agriculture programs, students' needs and interests, and program objectives. Instead, teachers should select problem areas for a "local core" and supplement them with other problem areas important in the local area. Another suggestion is that the entire packet need not be taught to a given group during a given year. For example, teachers may want to teach part of the parliamentary procedure packet to freshmen and teach the remaining part to an advanced class.

Specific suggestions for using the different components of a problem area packet are presented in the following section.

1. Suggestions to the teacher. These suggestions are included on the first page of each problem area. Teachers should read these suggestions before problem areas are scheduled for the year. Decisions need to be made regarding which problem areas will be taught, when they will be taught and the approximate number of days to be devoted to each problem area. On the basis of these decisions, teachers can construct a course calendar.

   In some cases, the suggestions also indicate the preplanning that needs to be accomplished before instruction begins. Instructional materials not included in the packet need to be ordered in advance.

2. Teacher's guide. The teacher's guide is not a lesson plan. It is a source of teaching ideas which may be used by the agriculture teacher to conduct an effective instructional program. Each

guide includes more material than most teachers would use. Teachers should select from the several interest approaches and teaching activities those suggestions which seem more appropriate for the local situation. The teacher's guide emphasizes a problem solving method and a student-centered, activity approach. Lecture-presentation, rote memorization of facts and subject matter mastery should be kept to a minimum. The teacher's guides include suggestions for carrying learning to the "doing" level. Application of classroom learning to S.O.E.P.'s and FFA activities is an important part of the teaching process.

3. Information sheets. These sheets have been prepared for those problem areas where subject matter may be difficult to locate. If reference materials are not available, the teacher may want to duplicate copies of the information sheets for class use.
4. Student worksheets or assignment sheets and keys. These exercises are designed as classroom activities for student use. They may provide a change of pace for students when they have grown tired of other activities which may be overused. Most exercises include a teacher's key with suggested answers.
5. Demonstrations. The teaching of certain problem areas often calls for demonstrations of manipulative skills or projects. The demonstration outline may be used by the teacher or students to conduct demonstrations of manipulative skills. Teachers may want to change some of the student activities included in the Teacher's Guide into student demonstrations.
6. Job sheets. In some problem areas, such as the agricultural mechanics areas, job sheets have been provided which include a step-by-step procedure for performing agricultural jobs. These sheets may be used to guide students engaged in individualized learning and to take a load off the busy teacher who has a large class involved in a variety of learning activities.
7. Transparencies. Some of the problem areas include transparency masters which can be used to prepare overlays and others include small reproductions of transparencies developed for the Core Project which are available from Vocational Agriculture Service, University of Illinois.
8. Discussion guide for transparencies. Most of the transparencies included in the core materials do not include on the overlay any narration or explanation. The discussion guide provides teachers with some suggested points to bring out in the discussion of a transparency including explanations, descriptions and discussion questions related to the transparency.
9. Sample test questions and key. The sample test questions are not intended to be used as a test. The teacher can select questions from those included in the problem area if they are appropriate and add others as needed. Some teachers may choose not to administer a test at the close of each problem area and to prepare a comprehensive test at the end of a unit.

The numbering system found at the bottom of each page includes four digits or letters. The first number is a Roman numeral II which stands for Core II. The letters which run from A-J designate the unit. The third character is a numeral which indicates the problem area within the unit (1 means first, 2 for second, etc.). The last digit is the page number. All pages are numbered consecutively and the page in each problem area start with "one."

The color scheme used in the Illinois Core Curriculum is as follows:

Salmon--Suggestions to the Teacher

Tan--Teacher's Guide

Light Blue--Information Sheets

Ivory--Student Worksheets

Pink--Job Sheets

Lime--Teacher's Key to Student Worksheets

White--Transparencies and Transparency Discussion Guides

Yellow--Sample Test Questions

Green--Teacher's Key to Sample Test Questions

Gold--Safety Rules

Gray--Project Plans

Raspberry--Suggested Content Outline

CORE CURRICULUM ADVISORY COMMITTEE

RURAL AGRICULTURE PROGRAM

1. High School Agricultural Occupations Teachers

District One - Russell Leman
Roanoke-Benson High School

District Two - Richard Dunn
Seneca High School

District Three - Charles Ferguson
Pittsfield High School

District Four - Allen Hornbrook
Paris High School

District Five - Larry Keyser
Clay City High School

2. Area Vocational Center Representative

Donald Kaufmann
Grundy County Area Vocational Center

3. Community College Representative

William Martinie
Illinois Central College

4. Agricultural Business/Industry Representative

a. Agricultural Service and Supply
Louis Wagner, Sommer Bros. Seed Co.

b. Agricultural Mechanics
Roger Neitfeld
Pfister Implement Co.

c. Horticulture
Frank Louis Selmi

5. Governmental Agency Representatives

John Rowley, Assistant Director
Illinois Department of Agriculture

6. Joint Staff Representatives

Dr. Len Harzman, Western Illinois University
Dr. Joe Townsend, Illinois State University
Mr. Tom Wiles, DAVTE, Illinois State Board of Education

CORE CURRICULUM FIELD TEST TEACHERS

RURAL AGRICULTURE PROGRAM

District 1

Joe House
Princeville High School

Mike Walsh
Alpha-Woodhull High School

Lawrence Shimmin
Sherrard High School

District 2

David Wilson
Newark High School

John Hintzsche
Rochelle High School

Allen Dietz
Sycamore High School

District 3

Barbara Clayton
Brown County High School
Mt. Sterling

Tom Hand
West Pike High School
Kinderhook

Bernard Goetze
Winchester High School

District 4

Richard Schertz
Moweaqua High School

Al Zwilling
Litchfield High School

Mark Wildman
Stewardson-Strasburg H.S.

District 5

Doug Hileman
Marissa High School

Cedric Gowler
Centralia High School

Larry Keyser
Clay City High School

UNIT A: Orientation to Agricultural Occupations

PROBLEM AREAS:

1. Orientation to vocational agriculture course and SOEP
2. Developing effective study habits

UNIT A: ORIENTATION TO AGRICULTURAL OCCUPATIONS

PROBLEM AREA: ORIENTATION TO THE AGRICULTURE COURSE AND S.O.E.P.

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth-grade or second-year students enrolled in an agricultural occupations program. The recommended time for teaching this problem area is at the beginning of the school year. The estimated time for teaching this problem area is 1 to 2 days depending on how much time the teacher wishes to spend on discussion and conducting the suggested exercises. The materials in this problem area were selected and written with the following assumptions:

1. That the students will have completed one year of Vocational Agriculture and FFA.
2. That all students will carry an approved S.O.E.P. and belong to the local FFA chapter.

The instructor is encouraged to conduct a local search to locate other supplementary materials. The items in this problem area are for reference or modification as the teacher adapts this problem area to his/her local situation.

CREDIT SOURCES:

These materials were developed through a funding agreement, R-33-32-D-0542-388 with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education, Research and Development Section, 100 North First Street, Springfield, Illinois 62777. Opinions expressed in these materials do not reflect, nor should they be construed as policy or opinion of the State Board of Education or its staff.

The teacher's guide and worksheets were developed by Jerry Pepple, Department of Vocational and Technical Education, University of Illinois. The membership record forms were developed from examples in the FFA Adviser's Handbook. The "Ag Facts" sheet was prepared by The National FFA Center, Alexandria, Virginia.

Suggestions and guidance in the development of these materials were provided by the Rural Core Curriculum Pilot Test Teachers.

TEACHER'S GUIDE

I. Unit: Orientation to agricultural occupations

II. Problem area: Orientation to the agriculture course and S.O.E.P.

III. Objectives: At the close of this problem area the students will:

1. Be familiar with the type of units and problem areas which will be covered in the second-year agriculture course.
2. Understand the local policies and procedures for the second-year agriculture course.
3. Be able to update the agriculture department copy of their personal information card.
4. Be able to update their S.O.E.P. record books.

IV. Suggested interest approaches:

1. Distribute the planned course outline to the students. Let the students react to the course outline and make possible suggestions on specific topics which are of interest to them.
2. Discuss the possible learning activities (field trips, FFA activities) which the students will have the opportunity to participate in throughout the year. Use information sheets, "Ag Facts and FFA Facts" to develop discussion and interest in agriculture and FFA.
3. Point out the major skills and knowledge areas which the students will master by the end of the year.
4. Post a monthly calendar in the room and have students fill in all Ag. and FFA activities. Do this each month to keep students informed.

V. Anticipated problems and concerns of students:

1. What will we be studying this year?
2. What FFA contests can I participate in this year?
3. How do I get the Chapter FFA Degree?
4. What do I need to do to my S.O.E.P. record book that was used last year?
5. When will we have an FFA meeting?

6. What happened at the State FFA Convention this summer?

7. What was done during the summer on the school land laboratory?

8. Will we need new notebooks this year or use the same one we had in our freshmen year?

9. When will we be working in the shop?

10. Will I need any special supplies for this course?

VI. Suggested learning activities and experiences:

1. Distribute the students' Personal Information Sheet for them to fill out and update. For an example form, refer to Core I problem area "Introduction to school, agriculture program and FFA."

2. Distribute Student Worksheet 1 "Member Record Forms" and have students record their previous FFA related activities.

3. Develop a list of FFA activities on poster board and display the list so the students can sign up for these activities.

4. Plan a field trip to the school land laboratory and explain to students the jobs which have been done since last spring. Use Student Worksheet 2 "Land Laboratory Field Trip." Have students complete the worksheet for their notebook.

5. Arrange for the FFA Chapter Delegates to the State FFA Convention to speak to the class concerning the highlights of the convention.

6. Organize a class S.O.E.P. project tour. Use Student Worksheet 3 "Report on Project Tour," as a suggested source of information the host student should give to the class. Take slides of project visits.

7. Answer student questions concerning the requirements and the deadlines for application for the Chapter FFA Degree.

8. Have students prepare and present a short oral report on their summer activities which relate to their S.O.E.P. or FFA events.

9. Use Student Worksheet 4 "Record Book Check" as a guide in determining a student's progress in record keeping.

10. Fill in the necessary information on the Orientation Transparencies as an aid in discussing course requirements.

VII. Suggestions for using this problem area:

1. This problem area should introduce the students to the benefits and advantages of applying for the Chapter FFA Degree and provide an opportunity for the students to obtain an appropriate application form.
2. The students should become familiar with the course content and the objectives and requirements for the course.
3. This problem area should provide students with the opportunity to update their S.O.E.P. record books.

VIII. Evaluation:

1. Collect the students' personal data sheets and check for completion.
2. Evaluate the students' oral reports.
3. Collect and evaluate the students' S.O.E.P. record books.

IX. References and aids:

1. Student notebooks
2. Student S.O.E.P. record books
3. Course outlines
4. Student personal data sheets
5. Student worksheets

INFORMATION SHEET

AG FACTS*

Agriculture is . . .

...the #1 industry in the U.S.! Its assets total $927 billion which is equal to 88% of the capital assets of all manufacturing corporations in the U.S.

...the #1 employer in the U.S.! Nearly 17 million people work in some phase of agriculture. Farming employs 4.4 million workers--as many as the combined payrolls of the transportation, steel and automobile industries. In all, agriculture accounts for one of every five jobs in private business.

...the #1 inflation fighter! Agricultural productivity growth has been 5 times greater than that of the non-farm industry over the past 5 years. One farm worker supplies enough food and fiber for 68 people today (48 in the U.S. and 20 overseas). This was 26 people just 20 years ago. American farmers produce over 54% more in crop output (on 3% fewer acres) than their fathers.

U.S. farm workers produce an average 375,000 pounds of food crops each year. European farmers produce 35,000; Russian, 33,000; and Asian, 4,400.

...the #1 exporter! Ag exports totaled a record $40 billion in 1980 and are projected to reach $47 billion in 1981, making it by far the leading positive factor in the U.S. balance of trade. Ag exports provide employment for 1.3 million U.S. workers and generate more than $82 billion in ripple-effect domestic economic activity. Every time farm exports increase by $1 billion, 31,700 new jobs are created. If there were none, unemployment would jump nearly 20%.

Ag exports have increased almost sixfold in the last 10 years. Today 1 of every 3 harvested acres is consumed abroad. With less than 7% of the world's land, the U.S. produces 48% of the world's corn and 63% of the soybeans.

...#1 in providing low food prices! Farmers receive an average 39¢ for every dollar spent in grocery stores for U.S. farm-grown food--62¢ per dollar spent for choice beef; 20.5¢ per 46.2¢ spent for frozen orange juice concentrate; 4.2¢ for wheat in a 42.3¢ loaf of white bread; and 52.5¢ for a 98.9¢ half gallon of milk. Retail food prices at grocery stores rose 8% in 1980 which was the smallest increase in 3 years and well below the overall inflation rate of 13½%. More than 8,000 different varieties of food are offered in American grocery stores.

	Soviet Union	Japan	Mexico	U.S.
% population involved in agriculture	17.3	11.8	36.9	2.3
% disposable income spent on food	34	23	40.9	17

minutes worked to earn:				
1 lb. beef	60	174	132	16
I lb. bread	8	7	52	4
I dozen eggs	71	12	62	6

*Compiled July, 1981 by the National FFA Center Information Department

INFORMATION SHEET

FFA FACTS

The Future Farmers of America is . . .

...the national organization of high school students preparing for careers in agricultural production, processing, supply and service, mechanics, horticulture, forestry, natural resources and professions. FFA chapters are establishd in public schools offering instruction in vocational agriculture under provisions of the National Vocational Education Acts.

FFA was organized nationally in 1928 in Kansas City by vocational agriculture students who had formed local and state organizations, some dating back to 1917. In 1950, Congress granted the FFA a Federal Charter. Today, there are 8,236 chapters in 50 states as well as in Puerto Rico and the Virgin Islands. Active membership is 482,611.

The primary aim of the FFA is to develop agricultural leadership, cooperation and citizenship. Through participation in FFA activities, young men and women, ages 14-21, interested in all aspects of the agricultural industry, learn how to speak in public, conduct and take part in meetings, handle financial matters, solve their own problems, and assume civic responsibility.

FFA members elect their own officers and plan and carry out activities with a minimum of supervision from their vocational agriculture instructor who serves as chapter advisor. FFA judging contests, public speaking contests, and incentive awards for chapters and individual members complement the classroom instruction and challenge students to excel.

Degrees of membership are awarded on the basis of individual achievement in the organization. The member begins as a Greenhand and progresses to the Chapter Farmer Degree in the local chapter. The State FFA Degree is presented by the State FFA Association, and the American Farmer Degree is presented by the National FFA Organization.

The National FFA Organization has offices near Alexandria, Virginia, where the organization owns and operates the National FFA Supply Service, The National FUTURE FARMER Magazine, the Program Division, and an FFA Alumni Association.

The Future Farmers of America Foundation, Inc., supports the FFA through incentive awards to FFA members and chapters. Foundation funds are provided by businesses, industries, organizations and individuals to recognize FFA achievements at local, state, and national levels.

The FFA Alumni Association was founded in 1972 to give former members and all FFA supporters an opportunity to strengthen the organization. FFA Alumni at the local, state and national levels make substantial contributions of time and resources to assist in the continued growth and development of the FFA.

STUDENT WORKSHEET #1

MEMBER RECORD FORMS

CANDIDATE'S PARTICIPATION IN FFA ACTIVITIES FOR AWARDS AND RECOGNITION

List below activities such as livestock judging, crop and soil judging, FFA foundation awards, FFA band, chorus. On state and national winnings, indicate where under "Placing."

School Year	Activity	Level of Participation	Placing

COOPERATIVE ACTIVITIES SPONSORED BY THE FFA

List in this section only those FFA activities that involve group planning or group participation such as: cooperative buying or selling, pig chains, use of cooperative credit, cooperation with participating organizations in community chapter enterprises, land reclamation, soil conservation, reforestation, educational tours, parent-member banquets, sponsorship of local fairs, and preparation of chapter exhibits for fairs and shows.

School Year	Activities Indicating Cooperation	Level of Participation	Scope Number	Responsiblity

LEADERSHIP ACTIVITIES SPONSORED BY THE FFA

List in this secton only FFA activities that provide leadership participation such a public speaking, radio and TV programs, parliamentary procedure contest, leadership school, FFA camp, chairperson of committees on banquets or other special leadership events.

School Year	Leadership Activity	Level of Participation	Status or Ranking such as Delegate, Chairman, etc.

LEADERSHIP IN SCHOOL AND COMMUNITY ACTIVITIES OTHER THAN FFA

List in this section only activities not sponsored by the FFA that provide leadership participation such as: class officer, officer of Sunday School class, officer of Honor Society, captain of athletic team, officer in participating organization, member of breed associations, school, and civic organizations, and showing non-FFA livestock or crops.

School Year	Activity and/or Organization	Level of Participation	Length of Services Responsibilities, Awards

STUDENT WORKSHEET #2

REPORT ON VISIT TO LAND LABORATORY OR GREENHOUSE

I. DATE: ____________________ NAME: ____________________

II. MAP OF LABORATORY (show location of enterprises):

III. PURPOSE OF VISIT: ____

____

____

IV. ENTERPRISES ON LABORATORY (type and quantity):

A.	____________________	D.	____________________
B.	____________________	E.	____________________
C.	____________________	F.	____________________

V. CONDITION OF ENTERPRISES (stages of growth or development):

A. ____

B. ____

C. ____

D. ____

E. ____

F. ____

VI. MAJOR PROBLEMS WITH ENTERPRISES: (identify weeds, insects, etc.)

A. ______________________________

B. ______________________________

C. ______________________________

VII. MAJOR JOBS TO BE COMPLETED NEXT: ______________

____

____

____

STUDENT WORK SHEET #3

REPORT ON S.O.E. PROJECT TOUR

I. DATE ____________________

II. THIS PROJECT BELONGS TO __________________________.

III. THE MAIN PRODUCTION PROJECT IS ____________________.

IV. THE SCOPE OF THE PROJECT IS __________________(size).

V. IF CROP - GIVE VARIETY ________________

POPULATION ________________________

WEED CONTROL ____________________

TILLAGE PRACTICES ____________________________

____

SPECIAL PROBLEMS ENCOUNTERED ________________

____

VI. IF LIVESTOCK - GIVE BREED ________________

INCREASE IN UNITS ________________

MANAGEMENT PRACTICES (SANITATION, DISEASE, ETC.)

____

____

SPECIAL PROBLEMS ENCOUNTERED ________________

____

VII. SUMMARIZE PROJECT IN YOUR OWN WORDS (WHAT YOU LIKE OR DISLIKE, SUGGESTIONS FOR CHANGES, ETC.)

____

____

____

STUDENT WORK SHEET #4

RECORD BOOK CHECK - KEEPING RECORDS UP TO DATE
(KEEP THIS SHEET IN RECORD BOOK)

Grade ____________________
Date ______________________

Green Pages

Page II	Part of production records at planting, beginning inventory
Page III	Sales (when sold)
Page IV	Notes, enter often
Page V	Approved practices - Complete on time

Yellow Pages

Page LB and II	Purchase of animals (when purchased) breeding, birth, weaning records (the date), death loss
Page III	Sales (when sold)
Page IV	Notes, enter often
Page V	Approved practices - Complete on time
Page VI	Weights (enter the date)
Page VII-VIII	Enter appropriate items for product sales
Page IX-XI	Keep feed record up to date (Don't forget pasture)

White Pages

Page 1-3	Labor Keep current and separate by enterprise
Page 4-9	Other expenses (when incurred) Fertilizer, seed, machinery, breeding fees
Page 10-11	Show record, if exhibited
Page 12	Miscellaneous income (Don't leave this out)
Page 16	Net worth
Page B, C	Improvement projects Complete planned improvements Plan additional improvements

Page D Skills

Keep up to date
Aim for at least 20 new skills

ITEMS COMMONLY NEGLECTED OR OVERLOOKED

Signatures Notes Approved Practices

Breeding Records Feed Records Labor Entries

Other expenses - Machinery, Fertilizer, Seed, Hauling, Medicines, Veterinarian, Straw, etc.

Skills Improvement projects

Dates Name of enterprise at top of page

STUDENT WORK SHEET #4

RECORD BOOK CHECK SHEET
CROPS PAGES

____
ENTERPRISE

Name ______________

Cover ______________________________

Business Agreement ______________________________

Machinery Cost Estimations

Page I

II

III

IV

V

VIa

WHITE PAGES:

Labor-- ______________________________

Other Expenses ______________________________

Improvement Project, page B-C ______________________________

Supplementary Farm Jobs, page D ______________________________

STUDENT WORK SHEET #4

RECORD BOOK CHECK SHEET
LIVESTOCK PAGES

Enterprise ______________________ Name ______________

Cover ______________________

Business Agreement ______________________

Breeding, Birth, & Weaning Page ______________________

Page I

II

III

IV

V

VI

VII & VIII

IX & Xa

X & Xb

XI

XII

XIVa

STUDENT WORK SHEET #4

RECORD BOOK CHECK SHEET
WHITE PAGES

Name ______________

Labor Records
p. 1-3

Other Expenses (p. 4&5)

p. 6&7

p. 8&9

Show Records (p. 10&11)

Misc. Income (p. 12)

Depreciation (p. 13)

Financial Summary (p. 14&15)

Capital Value & Interest Charges (p. A)

Improvement Projects B & C

Supplementary Farm Jobs (p. D)

VOCATIONAL AGRICULTURE
COURSE DESCRIPTION

INSTRUCTOR:

PHONE NUMBER:

CLASS & SHOP ROOM NUMBER:

FREE PERIOD:

PREREQUISITE:

COURSE DESCRIPTION:

TEXTS:

SHOP PROJECTS:

SAFETY:

MISCONDUCT:

GRADES:

REQUIREMENTS:

CLASS PREPARATION:

SHOP PREPARATION:

NOTEBOOKS:

ASSIGNMENTS:

ATTENDANCE:

S.O.E.P. :

FFA :

UNIT A: ORIENTATION TO AGRICULTURAL OCCUPATIONS

PROBLEM AREA: DEVELOPING EFFECTIVE STUDY HABITS

SUGGESTIONS TO THE TEACHER:

At least three separate aspects of the agricultural occupations teacher's job can be identified. These three aspects are as follows:

1. Motivating the student to learn.
2. Teaching the student how to learn.
3. Presenting subject matter and directing student learning activities

This problem area addresses the second aspect of the teacher's job; namely, teaching the student how to learn. It includes materials related to problem-solving skills, use of the student notebook, field trip procedures and rules, how to study, notetaking skills, and effective listening. Approximately 2-3 days should be scheduled in early September for this problem area. Teachers should modify and adapt the content of the problem area to fit their methods and teaching style. Even though this problem area is included in Core II, it could be taught to freshmen as well as sophomores.

CREDIT SOURCES:

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The Information Sheets on Notetaking Skills, Pre-reading Techniques and Cloze Procedure and Close Test were developed by Natalie Miller, Reading Instructor, Academic Skills Center, Joliet Junior College, Joliet, Illinois. The remaining materials in this problem area were developed by Paul Hemp, Department of Vocational and Technical Education, University of Illinois and field tested by the Rural and Metropolitan Field Test Teachers.

TEACHER'S GUIDE

I. Unit: Orientation to agricultural occupations

II. Problem area: Developing effective study habits

III. Objectives: At the close of this problem area students will -

1. Understand the problem solving approach to teaching and why it is used.
2. Know how to keep a notebook or class notes.
3. Understand how to conduct themselves on a field trip.
4. Be able to use effective study skills and learning procedures.

IV. Suggested interest approaches:

1. Ask class lead questions such as the following:
    - a. Are you satisfied with what you are learning in school?
    - b. Do you feel you should learn more?
    - c. Are your grades acceptable to yourself, your parents, a prospective employer, a college admissions officer?
    - d. Do you enjoy school and learning?
2. Describe and define the scope and nature of the problem area indicating major topics or areas to be covered.
3. Explain why effective study habits are important.
4. Emphasize the importance of "learning to learn."
5. Ask students to identify ways that vocational agriculture is different from other courses with respect to teaching methods, class activties and out-of-class work.
6. Inform the class of your teaching style. Help them to understand your expectations.
7. Ask class to repeat the FFA Motto and to explain what "Learning by Doing" means.
8. Help class develop a list of objectives for this problem area to set the stage for problem identification.

V. Anticipated problems and concerns of students:

Lead a class discussion to identify problems and concerns of students. Write the list on the chalkboard.

Teaching methods

1. What teaching methods do you use?
2. What is problem solving and how does it work?
3. Can we bring problems from home for the class to study?
4. Do we have anything to say about what problems will be studied in class?

Student notebooks

1. Do we have to keep a notebook? Will it be graded?
2. What should we keep in our notebooks?
3. Can we take our notebooks home?
4. Why do we keep notebooks?

Field trips

1. How many field trips will we take this year?
2. How should we dress for a field trip?
3. What rules are we supposed to follow when we go on a field trip?
4. Will you grade us on what we learn on field trips?

Supervised study

1. What is supervised study? How often will we have it?
2. What sources of information can we use in looking up answers to questions?
3. Why don't we use a single textbook like they do in other courses?
4. How can we make effective use of supervised study periods?

5. When should we use the following to locate information?

   a. books
   b. magazines
   c. bulletins
   d. circulars
   e. resource persons

6. How should we use an index? table of contents?

7. What is meant by "skimming" a reference?

8. How can we tell if we are good readers?

9. How can we improve our reading skills?

Listening and speaking skills

1. When should we talk and when should we listen?

2. What is meant by a "good listener?"

3. Will we be graded on how much we talk in class?

4. Do we have to raise our hands to get permission to talk?

5. How can we take good notes?

Preparing for examinations

1. How often will we have tests or examinations?

2. What kinds of questions will be on these tests or examinations?

3. How can we prepare for tests and examinations?

4. What should we do with an exam after it has been graded and returned?

VI. Suggested learning activities and experiences:

1. Inform the class about the teaching methods you plan to use. Discuss the following:

   a. Problem solving approach
   b. Lecture-presentation
   c. Demonstrations (job instruction)
   d. Other methods you use

2. Explain to the class how they can or cannot be involved in determining what is to be studied.

3. Explain the steps involved in the problem solving approach to teaching. Modify the following steps to match your teaching procedure:

    a. Interest approach - determining where we are, present and past experiences
    b. Determine goals (where we want to go)
    c. Identify problems - explain why students should help identify these problems
    d. Solve problems, answer questions through supervised study
    e. Develop solutions and conclusions
    f. Plan for application outside of class to SOEP's or FFA
    g. Evaluate results

4. Inform class about your notebook policy. Discuss the following:

    a. Are notebooks required?
    b. How should they be used?
    c. Evaluation procedures

5. Use Transparencies on "Keeping a Notebook" to explain to class what they are expected to record in their notebooks.

6. Develop a system for storing notebooks in the agriculture classroom.

7. Use Information Sheets on Notetaking Skills and Pre-reading techniques to teach students effective study habits

8. Discuss questions concerning field trip policies and procedures

    a. Purposes of field trips
    b. Examples of field trips
    c. Preparations to be made
    d. Field trip rules

9. Distribute Information Sheet on "Supervised Study." After students have read the handout, conduct a discussion to answer problems and concerns in this area.

10 Identify ways that students can improve their listening habits. Emphasize paying attention to whomever is speaking, shutting out distractions, and maintaining good eye contact with the teacher or speaker.

11. Have students "test" their listening skills by listening to a short presentation by the teacher and then writing down or repeating what he or she said.

12. During class discussions, ask a student to summarize or report back what another student has said. This promotes good listening habits and provides students with practice in how to listen.

13. Use the Laboratory Exercises, "Improving Listening Skills" for student practice in developing better listening habits and skills.

14. Explain the grading system used by discussing the following:

    a. How course grades are calculated.
    b. How a paper is graded including spelling and grammar mistakes.
    c. How notebooks and record books are graded. Use Information Sheet on Notebook Evaluation Score Card.

15. Discuss ways students can prepare for tests and examinations. Include the following:

    a. Reviewing class notes
    b. Memorizing important subject matter
    c. Handling make-up work

16. Use the Cloze Procedure to determine if student's reading ability matches the level of difficulty of the text material.

VII. Application:

1. Most of what the student learns in this problem area will be used in his or her school work now or in the future.

2. Skills in locating information and solving problems should transfer to out-of-school situations and be used as life skills for years to come.

VIII. Evaluation:

1. Testing is not recommended for this problem area.

2. Results of student learning should show up throughout the year as students become more effective learners.

IX. References and aids:

1. Materials included with this problem area.

2. Notebooks, sample references and other learning material available in the classroom.

INFORMATION SHEET

SOURCES OF AGRICULTURE INFORMATION

Students enrolled in agricultural occupations courses usually use a variety of sources to learn about agriculture. A wide range of problems and topics are discussed in agriculture courses and these problems and topics vary from school to school. This means that it is difficult to use a single textbook or reference which would cover the problem areas or topics studied in a particular course. Some of the information sources you should use in your study of agriculture and suggestions on how to use them are as follows:

1. Reference books - Most agriculture departments have a collection of agriculture reference books which students can use during supervised study. These reference books usually contain detailed information which may not be included in circulars or subject matter units. Students should explore agriculture references and become familiar with one or more books in each agriculture area such as livestock, horticulture, soils, agricultural mechanics, field crops, etc.

2. Subject matter units - Vocational Agriculture Service at the University of Illinois publishes many short units ranging from 4-16 pages in length. These units are written on problem areas commonly taught in high school agriculture classes and include study questions for student use. The units are written for high school level students and are prepared by agricultural educators who were former high school teachers of agriculture.

3. Circulars - These booklets are prepared on a variety of agriculture subjects and written in language that can be understood by farmers and consumers. Most of the agriculture circulars used in high school classes are published by agriculture staff members at a university.

4. Bulletins - These booklets usually report research matters and are often too technical for most high school students. They have a limited use as instructional material for high school students.

5. Magazines - Most schools subscribe to a large variety of agriculture magazines. These magazines are interesting reading and include recent developments and new ideas. Sometimes, information and practices in magazines have not been subjected to field testing or proven in practice.

6. Filmstrips, transparencies, films - Visuals are an excellent source of agriculture information which portray pictures and drawings which cannot be communicated with printed words.

7. Resource persons - Agriculture students can obtain useful information from their parents, employers, agriculture workers and

business people. Every community offers a rich resource of people who know a great deal about agriculture and are willing to help students learn. Your instructor will probably invite resource persons to class to speak on selected topics.

INFORMATION SHEET

SUPERVISED STUDY

What is supervised study?

Supervised study is an individualized learning activity which involves reading, looking up information, answering questions or performing other written assignments. It is "supervised" by the teacher and conducted during class time.

Why do we have supervised study?

Students learn better when they search out answers and "discover" solutions to problems for themselves than they do when the teacher "gives" them the answer. During supervised study students learn how and where to locate information and how to evaluate subject matter from various sources.

What should students do during supervised study?

First, the assignment including the problems to be solved, the questions to be answered or the material to be studied should be clearly understood. Secondly, supervised study should be a quiet time with students working independently. A suggested procedure to follow during supervised study is as follows:

1. Get necessary references and materials.
2. Locate information by using the table of contents or index.
3. If the teacher has assigned specific pages of a reference, read the assignment first and then, go back and find answers to the assigned questions.
4. Take notes on scratch paper. Your notes or answer are tentative. The final and correct answer will be obtained later from class discussion.
5. If the information you find is different from information given in other sources, evaluate the source. Check the date of the publication and the credibility of the author or publisher.
6. Prepare yourself to present answers and solutions to the class during the discussion period.

Supervised study involves more than looking up information or answering questions. It helps students to learn about problem-solving, to become familiar with various informaton sources and to use information to solve real-life problems.

INFORMATION SHEET

NOTEBOOK EVALUATION - SCORE CARD

EVALUATION	E	VG	G	F	P	U	MAXIMUM POSSIBLE SCORE
1. Content							40
2. Organization							20
3. Completeness							20
4. Neatness							10
5. Accuracy							10
6. Extra Credit							
							TOTAL 100

KEY:

E = Excellent
VG = Very Good
G = Good
F = Fair
P = Poor
U = Unacceptable

INFORMATION SHEET

LEARNING ABOUT THE PROBLEM SOLVING METHOD

1. Starting the class.

   Before we can begin class, we need to get settled in our seats with necessary supplies such as pencils, paper, notebooks and other materials ready to use.

   The teacher will take the roll and make announcements or ask students to announce upcoming events or activities.

2. Interest approach.

   A few minutes may be used at the beginning of a problem area or the beginning of the class to identify the problem area to be studied and to accomplish the following:

   a. Find out what students know about the problem area.
   b. Create or increase students' interest in the problem area.

3. Establishing class objectives.

   Ask students to identify objectives for the problem area in terms of one or more of the following:

   a. Why the problem area should be studied.
   b. What learning outcomes are planned.
   c. What students should be able to do at the close of the problem area.

4. Identifying student problems and concerns.

   Class members should help decide what is to be studied and learned by identifying:

   a. List of problems and concerns
   b. List of skills to be learned

   The teacher should supplement the student list if necessary.

5. Developing the learning plan

   The teacher and the class should decide the order of learning activities to follow and make plans for conducting these learning activities.

6. Trial solution

   Students should answer those questions which can be answered by class discussion of what students already know.

7. Supervised study

A supervised study period should be conducted to locate new information and to answer questions which the trial solution period did not answer.

8. Group discussion to arrive at answers and solutions

Class members report back what they have learned and answers are recorded for all problems and concerns.

9. Summary and application

Class members summarize problem area by listing approved practices, principles or generalizations which apply.

Students decide how they are going to apply what they have learned to their S.O.E.P. or to the FFA.

10. Evaluation

As determined by the teacher.

INFORMATION SHEET

NOTETAKING SKILLS

Students usually need assistance in two areas of notetaking: confining their writing to the main points of the lecture or discussion so they can concentrate on listening and organizing their notes so the notes will be useful at a later point.

The instructor has the responsibility of presenting an orderly lecture or discussion, stressing important information, and pacing the class session so the student can follow the discussion. The instructor also needs to point out to the student the benefits which can be achieved through effective notetaking.

The purpose of notetaking is to permit the student to record a brief, orderly progression of the topics covered during a lecture or discussion session so these notes can then be reviewed over a regularly spaced time period. Notes which are stored away until the night before an exam lose their effectiveness. Educators know that more than sixty per cent of what was learned is forgotten within the first seventy-two hours after hearing it; therefore, students need to be taught to use their notes as a daily studying tool.

While there are many notetaking techniques which may be recommended, the one which gives the greatest variety of practice is the Cornell method as developed by Walter Pauk and modified here for use by horticulture or agriculture students. It has the benefits of an easy style and encourages regular review of notes on the part of the student. It also stresses the problem-solving approach in comparison to rote memorization of lecture material and will assist a student in preparing for (or practicing) an exam on a daily basis.

INFORMATION SHEET

STUDENT DIRECTIONS FOR NOTETAKING

1. Divide your notebook page into two segments, leaving one-third of the space on the left side and the other two-thirds on the right side. An 8½ by 11 notebook works the best.

2. Always place the topic of the discussion on the top of the page. This can be determined from the material that had been read for the class or the topic that the instructor announces at the beginning of the class.

3. Place the date at the top of the notes.

4. Number each page.

5. The right hand side of the page will be the column in which the student takes notes during class. Write the notes in a form with which you are comfortable. You may wish to outline the session or you may wish to write phrases or other brief notes. Be sure to leave a couple of spaces between topics. You may need this when you review your notes.

6. If the teacher writes information on the chalkboard be sure to copy it in your notes.

7. If other students ask questions or contribute to the discussion you should also include this in your notes.

8. Learn how to listen and summarize the main points. Do not write all the time or you may not hear something important the teacher is saying because you are so busy writing.

9. Do not stop taking notes until the class is over. It is very important to include the summary that the teacher makes at the end of the class.

10. The important part of notetaking comes after the class is over. You should read over your notes the same day that you take them. The following steps will help you prepare for exams beginning with the very day you took the notes:

    a. Look at each topic that you have covered in your notes that you took on the right hand side of your paper.

    b. Now ask yourself "What question might the teacher ask on the test about this information?"

    c. Write the question in the left hand column opposite the notes you took in class.

    d. Continue through your notes in this same manner.

e. If you find a topic that is not clear so you cannot think of a good question to write down you should either go to your textbook and try to clarify it or ask your teacher for a further explanation.

f. You have now constructed a practice test. If you are careful in thinking about the information you recorded in your notes, and if you write specific questions, you may find that you have very accurately predicted possible questions that will be a real test your teacher will give you.

g. Go over your notes with the questions every day. Read the questions that you have made, cover up the "answers" on the right side of your paper, and see if you have mastered the material.

On the next page you will see a sheet set up in the manner in which you should prepare your notes. With practice you will find that your study skills have improved because you are thinking about what you wrote down and you are also studying them every day.

INFORMATION SHEET

SAMPLE NOTETAKING FORM

Record Today's Date and Topic

RECALL COLUMN	RECORDING COLUMN
2. After class read over notes. In this column write a question based on the material on the right. Try to make it as much like a test question as you can.	1. Take notes in class or from your text as usual but write everything on this side of page. Leave space between each topic.
3. Recite and review by read question here.....	Covering information on this side of page and write down the answer as you think it appears here, Now, uncover this information and check to see if your answer was correct.

INFORMATION SHEET

PRE-READING TECHNIQUES

An interesting insight into student's study habits can be gained by asking them how they would begin to read an assignment. "If you were assigned a pamphlet on Identifying Tree and Shrub Insects to read by the next class session, where and how would you begin?" Most students would reply that they would simply turn to the first page and begin reading. In other words, they have no specific purpose for reading and therefore probably have low retention, lack of interest, and an inversion to the printed page.

To illustrate to the students the need for establishing a purpose for reading, one might give them this example: "On Saturday I plan to drive to Rockford to meet a friend. He drives a blue 1981 Ford Thunderbird. When I arrive in Rockford I drive systematically through the town, first going up and down all of the east-west streets looking for my friend. (You may illustrate this progression on the board.) I have covered all of the east-west streets and still have not located my friend, so now I will drive up and down all of the north-south streets. Do you think I located my friend? Why not? But was I not thorough in my search for him? I covered the entire town, street by street." The students will usually reply that it is futile to drive around the streets of a strange town hoping to locate someone with nothing more concrete than the description of a car. Someone may volunteer the information that an address would be needed--one needs to have a specific location before beginning the search.

Students may be very amused to think of someone driving around a strange town hoping to find a friend. The point can then be made that the habit of opening a book and starting to read through the chapter without a specific plan of attack is equally inefficient.

A classic previewing technique which was developed by Francis Robinson is an effective method for assisting students in improving their retention of textbook reading through immediate direct involvement. This method is called SQ3R and it includes surveying, questioning, reading, reciting, and reviewing.

Step 1: Survey, or preview the material to be read by skimming over it very rapidly. If there are headings, read the headings. If there is a summary or if there are questions at the end of the chapter, read this first. The surveying step should also include looking over charts or illustrative material to see how it relates to the reading material. During the survey step attention should also be paid to unfamiliar vocabulary.

Step 2: Question. Go back over the material and turn the headings into questions. This will help the reader remain active by directing attention toward the location of the answer.

Step 3: Read. Break the article or chapter into segments. Read to find the answer to the first question. Do not underline or make notes during the reading, but continue to the end of the first segment. By completing the reading before underlining, the student can determine the main idea and relevant details. Keep underlining to a minimum.

In the margin of the book make brief notes summarizing the content of each paragraph.

Step 4: Recite. Use the notes written in the margin like a test question. Check the answers against the material in the paragraph. Encourage students to master one segment, paragraph or section before going on to the next.

Step 5: Review. After the article has been read using questions and notes written in the margins, the entire article or chapter can be reviewed by returning to the margin notes, testing one's memory, and checking the answers against the paragraphs.

Once this technique has been taught, students may need to be encouraged to follow it until they have mastered its approach. The following fact sheet from Cooperative Extension Service may be used as an example.

INFORMATION SHEET

COOPERATIVE EXTENSION SERVICE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
COLLEGE OF AGRICULTURE

CONTAINER SOILS ARE DIFFERENT

L. Art Spomer
Department of Horticulture

Almost everyone has grown plants in containers. What is a container? It is any receptacle filled with soil or other growth media in which plants are grown. The commonly used containers include pots, flats, planters, cans, boxes, cartons, greenhouse benches, and baskets.

Containers hold media in which plants grow.

Most floricultural crops are produced in containers. Most other horticultural crops (with the exception of field crops) are propagated from seeds or cuttings and are grown in containers until they are large enough to transplant into ground beds in gardens or yards. House plants and an increasing number of landscape plants in urban areas are grown exclusively in containers. Container culture, therefore, is a very important aspect of horticulture. So anyone concerned with floricultural crop production and sales must know something about container soils. Although containers are widely used in floriculture, few floriculturists realize that container soils are different from ground bed soils.

Containers are used for house plants and landscape plants.

The soil's most important function in relation to plants is to store and supply the water and minerals essential for plant growth and survival. It is not enough for the soil to merely CONTAIN water and minerals; they must be AVAILABLE to the plant.

Soil stores and supplies water and minerals.

A number of soil and plant factors affect the availability of water and minerals in the soil to plants. One of the most important is soil aeration. That is the supply of oxygen to and the removal of carbon dioxide from the plant roots. Good aeration is essential for adequate root growth and absorption, by which the plant grows and survives.

Good soil aeration is needed for plants to survive.

All soils consist of a semirigid mass of minute solid particles permeated by a network of interconnected pores in which water, mineral nutrients, and air move and are retained. A container soil is isolated from the ground by the container and is usually open to the atmosphere at the top (surface) and bottom (drainage holes). The depth of a container soil is the vertical distance between the surface and drainage level.

Water, minerals, nutrients, and air move through Soil pores.

Container soils have two important characteristics that distinguish them from ground bed soils: container soils are small and shallow (Figure 1). The effect of the relatively small volume of soil in a container is obvious. The reservoir in the soil of water and minerals available to container plants is much less than to those growing in ground beds; therefore, this reservoir must be replenished by frequent irrigation and fertilization to maintain equivalent growth by plants in containers.

container soils have limited amounts of water and nutrients, so irrigation and fertilization are necessary.

The effect of shallowness in relation to container soils is less obvious. It can be demonstrated easily, however, with an ordinary flat cellulose sponge, like the one you use to scrub the bathroom or car. Place the sponge flat on the level, spread the fingers of one hand, and saturate the sponge by pouring water on it until water drips from the bottom. The sponge, like the soil, is permeated by pores that are full of water when the sponge is saturated. In other words, the sponge is a good model, or analog, of a container of soil. The sponge behaves like soil. After water ceases to drip from the flat sponge, placing it on end will permit more water to drain out (its water content decreases). Merely increasing the height of the sponge by turning it up on end decreases its water content.

a sponge has similar water holding characteristics as soil.

increasing the height of the sponge decreases its water content.

A real container soil behaves the same way. Actually, a perched water table forms at the bottom of the container soil (the drainage level), even though it has free drainage (open at bottom). Like any water table, the soil is saturated (the pores are filled with water); also, the water content decreases with the height above the water table.

Soil pores at the bottom of a container are filled with water.

Because of this "container soil effect," an excellent garden or field soil placed in a container will probably remain saturated following watering and drainage and result in poor soil aeration and poor plant growth. Even if the container is filled with coarse sand or perlite, the soil may remain saturated following irrigation and may be poorly aerated because of its shallowness. The deeper the container soil, the smaller its surface and average water content following watering and drainage.

Garden soil used in containers usually has poor soil aeration.

The effects of the container's smallness and shallowness create a dilemma. The soil in a container holds an inadequate supply of water and minerals to maintain growth for more than a short period; yet, that same soil may be too wet for the plant to absorb even this inadequate supply. The effects of the container's small size can be remedied by frequent watering and fertilization; however, that also increases the frequency of poor aeration (due to the shallowness of container soil).

necessary watering and fertilizing increases the frequency of poor aeration.

The effects of shallowness can be remedied by incorporating coarse-textured amendments (sand, sawdust, peat, perlite, bark, vermiculite, calcined clay, and the like) into the soil creating large pores that will drain after watering, despite the perched water table at the container bottom. However, insufficient amendment worsens aeration instead of improving it;

the addition of coarse textured soil amendments will improve soil aeration.

and excess amendment results in insufficient water retention for growth. Although the relatively small size and shallowness of containers do create problems for growing plants, the problems can be minimized by proper irrigation and fertilization and by using soil amendments.

too little amendments worsens aeration and too much cuts water retention.

Remember that CONTAINER SOILS ARE DIFFERENT. Therefore, they require different care than garden or field soils.

Container soils are different from garden soils.

INFORMATION SHEET

THE CLOZE PROCEDURE

The cloze procedure is an effective method to determine if the student's reading ability matches the level of difficulty of the text material. As a teacher you will then be able to adjust the material if it is too difficult or too easy for the student. The cloze test is easy to prepare and to administer and it has the advantage of using materials that you commonly assign for your class.

The cloze technique is based on the principle that students can use clues provided by the author's organization, language structure, and vocabulary to complete the passage.

1. Select a 300 word passage near the beginning of the text or article. Later selections may be too dependent upon concepts taught earlier and therefore may not be a valid indication of a student's ability to read the text. This material should be taken from a chapter which has not been read by the student.

2. After typing in the introductory paragraph, begin test by deleting every 5th word with approximtely 50 for the total passage. Be sure to keep the length of the spaces uniform, approximately 15 spaces.

3. Instruct students to read all the way through the selection before attempting to write in answers.

4. When scoring: Do not count synonyms. Do not penalize for misspelling. Raw score will be the correct replacement. Multiply X 2 to find percentage.

5. To obtain student placement for test find the percentage correct.

   Above 60% - text too easy
   40-60% - text appropriate for instruction
   Below 40% - text too difficult

A sample cloze technique taken from Lawn Establishment. University of Illinois at Urbana-Champaign: Circular 1066, 1972, is included in this problem area as an example.

LABORATORY EXERCISE

CLOZE TEST

Modifying the Soil

Turfgrasses can survive and persist on almost any soil, provided nutrients, water, and aeration are adequate. A sandy loam to loam soil, however, is preferred since turfgrass quality is generally better and management requirements are less stringent. An existing soil may be considered unsuitable because of poor drainage (as in clayey soils) or poor water- and nutrient-retaining capacity (sandy soils). On turfed soils subjected __________ heavy traffic, resistance to __________ is a highly desirable __________. Most soils can be __________ to improve their physical __________ significantly.

To improve aeration __________ drainage and to reduce __________ potential for compaction, soils __________ in clay may be __________ with organic matter (peat, __________ sawdust, etc.), sand or __________ coarse aggregates such as __________ clay. A fibrous peat (__________) is preferred over muck, __________ the latter frequently contains __________ amounts of dispersed clay __________ silt that may clog __________ pores and actually reduce __________ and aeration. Sand should __________ used to amend an existing soil only if enough __________ is available to make __________ resulting mixture that is __________ least 50 to 80 __________ sand. Smaller quantities may __________ do more harm than __________, and the resulting mixture __________ be more compactible than __________ original soil. Calcined clay, __________ synthetic material formed by __________ clay granules at very __________ temperatures, may be substituted __________ sand on a one-for-one __________. The quantities required and __________ cost of calcined clay __________ sand may limit their __________ for soil modification.

Drouthy, __________ soils may be improved __________ the addition of organic __________ or finer textured mineral __________. A 2-inch layer of __________ additive materials, incorporated to __________ total depth of 6 __________, may substantially improve the __________ capacity of the original __________ and also provide for __________ storage of essential plant __________. Alternatively, enough soil of __________ desirable properties can be __________ to cover the existing __________ by at least 6 inches. This is usually the most expensive method of soil amendment and, depending upon the quality of available soil, may not be the best answer. Any additional soil purchase should be free of quackgrass rhizomes and vegetative plant parts of other undesirable perennial grasses, for if such grasses develop in the new lawn, they cannot be controlled selectively with the herbicides presently available.

Under a vigorously growing turf, soil conditions generally will eventually improve without soil modification. This is a relatively slow process, however, and may be offset by the compacting effects of severe traffic.

TEACHER'S KEY

LABORATORY EXERCISE

CLOZE TEST

Modifying the Soil

Turfgrasses can survive and persist on almost any soil, provided nutrients, water, and aeration are adequate. A sandy loam to loam soil, however, is preferred since turfgrass quality is generally better and management requirements are less stringent. An existing soil may be considered unsuitable because of poor drainage (as in clayey soils) or poor water- and nutrient-retaining capacity (sandy soils). On turfed soils subjected to heavy traffic, resistance to compaction is a highly desirable characteristic. Most soils can be modified to improve their physical properties significantly.

To improve aeration and drainage and to reduce the potential for compaction, soils high in clay may be diluted with organic matter (peat, rotted sawdust, etc.), sand or other coarse aggregates such as calcined clay. A fibrous peat (sphagnum) is preferred over muck, as the latter frequently contains large amounts of dispersed clay and silt that may clog soil pores and actually reduce drainage and aeration. Sand should be used to amend an existing soil only if enough sand is available to make a resulting mixture that is at least 50 to 80 percent sand. Smaller quantities may actually do more harm than good, and the resulting mixture may be more compactible than the original soil. Calcined clay, a synthetic material formed by firing clay granules at very high temperatures, may be substituted for sand on a one-for-one basis. The quantities required and the cost of calcined clay or sand may limit their use for soil modification.

Drouthy, sandy soils may be improved with the addition of organiic matter or finer textured mineral soils. A 2-inch layer of these additive materials, incorporated to a total depth of 6 inches, may substantially improve the water-holding capacity of the original soil and also provide for better storage of essential plant nutrients. Alternatively, enough soil of more desirable properties can be purchased to cover the existing soil by at least 6 inches. This is usually the most expensive method of soil amendment and, depending upon the quality of available soil, may not be the best answer. Any additional soil purchase should be free of quackgrass rhizomes and vegetative plant parts of other undesirable perennial grasses, for if such grasses develop in the new lawn, they cannot be controlled selectively with the herbicides presently available.

Under a vigorously growing turf, soil conditions generally will eventually improve without soil modification. This is a relatively slow process, however, and may be offset by the compacting effects of severe traffic.

LABORATORY EXERCISE

IMPROVING LISTENING SKILLS

I. Directing and Maintaining Attention

1. Have the students close their eyes and listen for a number of seconds. Ask them to list the different sounds they heard during that time.

2. Read a short selection from an agriculture reference. Ask students to count the number of times they hear a particular word such as "a," "and" or "the."

3. Read aloud rapidly the following words:

   Holstein
   Tractor
   Harrow
   Duroc
   Brown Swiss
   Plow
   Hampshire
   Mower
   Cultivator
   Guernsey
   Poland China
   Ayrshire

   Ask individuals or teams to remember and report back the names of either farm implements, dairy breeds or swine breeds.

II. Following Directions

1. Play Simple Simon.

2. Play games involving the cutting and folding of paper, drawing, or writing according to oral directions.

3. Have students listen to and repeat directions that might be given to a traveler attempting to reach a particular place.

III. Listening to the Sounds of our Language

1. Have one team supply a word. The second team is to supply a rhyming word in a matter of seconds.

2. Read words in groups of three, four, or five. Have students identify the words that do or do not rhyme.

IV. Using Mental Reorganization

1. Read telephone or ZIP code numbers aloud and ask students to record them on paper.

2. Read aloud a series of numbers or letters with one-, two-, or three-second pauses after each. Following these sequence of three, four, five, or six, ask students to write the numbers or letters they can remember.

V. Finding Main Ideas and Important Details

1. Have students listen to a short selection and suggest a title.

2. Read three statements, one containing a main idea and the other two containing subordinate ideas. Have the students select the one that contains the other two. For example:

   All life on earth depends on the sun.
   The sun provides us with heat during the day.
   Ocean plants get their energy from the sun.

VI. Critical Listening

1. Have students listen to speeches recorded at State or National FFA Conventions in which speakers have strong views or opinions. As they listen, they should keep the following questions in mind:

   a. What is the speaker's purpose or motive?
   b. What emotionally toned words or phrases does he/she use to sway the listeners?
   c. Are the views presented based on fact or opinion?
   d. Does the speaker sell points by the use of propaganda techniques or by logic?
   e. Do the statements agree or conflict with my experience?
   f. What is the importance of the speech to others and to me?

2. Recorded radio and television commercials provide stimulating practice in detecting the more common propaganda techniques: name calling, transfer, testimonial, plain folks, band wagon, card stacking, glittering generalities, and repetition. As students listen they would attempt to classify the appeal or appeals used.

KEEPING A NOTEBOOK

I. ENTERPRISE OR UNIT ____________________

II. PROBLEM AREA ____________________

III. OBJECTIVES:

1.
2.
3.
4.

IV. PROBLEMS AND CONCERNS:

1.
2.
3.
4.
5.
6.
7.
8.

V. SOLUTIONS AND ANSWERS:

1.
2.
3.
4.
5.

VI. CONCLUSIONS AND APPROVED PRACTICES:

VII. STUDENT APPLICATIONS:

1.
2.
3.

VIII. REFERENCES AND AIDS:

1.
2.
3.

UNIT B: Leadership and Citizenship

PROBLEM AREAS:

1. Participating in individual and group activities in the FFA
2. Developing leadership skills

UNIT B: LEADERSHIP AND CITIZENSHIP

PROBLEM AREA: PARTICIPATING IN INDIVIDUAL AND GROUP ACTIVITIES IN THE FFA

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth-grade or second-year agriculture students who have been taught the basic leadership or citizenship problem areas in Core I. The recommended time schedule for this problem area is 3 to 5 days in September or early October. Materials for the following FFA activities are included in this problem area:

1. Proficiency Awards
2. FFA Achievement Award
3. Sectional Fairs and Shows
4. FB-FFA Cooperative Activities
5. FB-FFA Heritage Program
6. BOAC
7. Chapter Safety
8. National Chapter Award (Program of Activities)
9. Food for America

Materials on public speaking and parliamentary procedure are included in Core I and materials on degree advancement are included in Core II in the problem area on "Developing Leadership Skills."

Not all of the award programs are included in this problem area. Teachers should supplement the materials to meet local needs. To prepare for the teaching of this problem area, the teacher should do the following:

1. Check to see that copies of the Student Handbook, sample program of activities, state and national FFA materials are on file.

2. Schedule slide sets and/or films from State FFA Office, Roanoke, IL.

3. Duplicate class copies of forms, handouts, and other materials for student use.

4. Coordinate the teaching of this problem area with a motivational program such as the Reporter's Workshop, Leadership Training School or State Officers' visit.

CREDIT SOURCES:

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These materials were prepared by Paul Hemp and Betty Van Dyck, Project staff members and Steve Austin, FFA Advisor at Thomson High School, Thomson, Illinois. The Student Worksheet on Activity Selection is taken from An Instructional Packet on Leadership/FFA for Beginning Vocational Agriculture Students by Joe Townsend, Illinois State Univeristy and Richard Carter, Iowa State University and published by Vocational Agriculture Service at the University of Illinois. The problem area was reviewed for technical accuracy by Eldon Witt and John Fedderson, Illinois FFA Office, and field tested by 20 Illinois teachers.

TEACHER'S GUIDE

I. Unit: Leadership and citizenship

II. Problem area: Participating in individual and group activities in the FFA

III. Objectives: At the close of this problem area, students will:

1. Know the eleven major divisions of an FFA program of activities.
2. Be able to explain the importance and proper use of the FFA program of activities.
3. Be able to name at least 75% of the proficiency award areas.
4. Be able to name the levels of competition for FFA programs.
5. Be able to define, explain the purpose and list the general requirements of sectional fairs and shows, FFA Achievement Awards; Cooperative Activities, Heritage Program, BOAC, Chapter Safety, Chapter Award, Food for America Program, and Proficiency Awards.
6. Be willing to serve on at least one FFA standing committee and assist with at least one of the FFA chapter activities included in this problem area.
7. Be willing to develop personal goals involving individual activities in the FFA.

IV. Suggested interest approaches:

1. Distribute copies of Programs of Activities developed locally in past years or by other chapters and show class what has been included.
2. Ask class to rate the local FFA chapter as "Outstanding" "Good" "Fair" or "Poor."
3. Have students name the sectional, state and national awards won by the chapter last year. Write these awards on the chalkboard and add any that students have forgotten.
4. Find out how many students are interested in working for a state or national FFA degree. Have them name FFA activities which might help them achieve this degree.
5. Distribute copies of the Annual Report of the Illinois Foundation FFA and have students identify sectional winners in each of the Proficiency Awards for the previous year.

6. Refer to plaques and other awards on display in the agriculture classroom. Explain what each plaque represents.

7. Show one of the following slide sets available from the Roanoke office:

   a. FFA - Agriculture's New Generation
   b. FFA Unites Youth with Opportunities

8. Distribute copies of the FFA catalog to show students award plaques and materials available to local chapters.

V. Anticipated problems and concerns of students:

1. What FFA activities can our chapter be involved in? (The following FFA activity programs are included in this problem area:)

   a. Proficiency Awards
   b. FFA Achievement Award
   c. Sectional Fairs and Shows
   d. FB-FFA Cooperative Activities
   e. FB-FFA Heritage Program
   f. BOAC
   g. Chapter Safety
   h. National Chapter Award (Program of Activities)
   i. Food for America

2. List these programs on the chalkboard or on an overhead transparency. Then select one program and ask the class a lead question such as "What do we need to know about each of these programs?" THe following concerns should be identified: (Note--These problems apply to most of the programs included in this problem area).

   a. What is the purpose of the program or activitiy?
   b. Who is eligible to compete?
   c. What is involved in applying for this award or entering competition for this activity?
   d. What does the winner receive?

3. In addition, ask class to identify general problems or concerns which apply to the award programs and the best ways to get started with them. Some anticipated problems and concerns in this area are as follows:

   a. How do we decide which group activity to conduct?
   b. Where can we learn more about these programs?
   c. Is everyone supposed to participate?
   d. How are the FFA committees appointed?

VI. Suggested learning activities and experiences:

1. Develop a class list of problems and concerns. Conduct supervised study to give students an opportunity to find solutions to problems. Have students read the following:

   Student Handbook - pp. 49-53, 79-95, 114, 119-121.

2. Present additional information to students using transparencies included with this problem area.

3. Have students read Information Sheets and/or review them with the class in a group discussion.

4. Show the following slide sets or films available from the State FFA Office in Roanoke.

   a. Food for America - FFA Tells the Story
   b. A Proficiency Award for You
   c. Journey to Safety
   d. Safety Makes Sense
   e. The Game Plan (BOAC)

5. Use the Student Planning Worksheet on Sectional FFA Fairs and Shows for students to record information presented by the instructor.

6. Explain what should be included in an FFA program of activities and how the program should be developed. Use the Worksheet "Preliminary Program of Activities" to identify members, goals, ways and means, etc. Use Student Worksheet "Activity Selection Scorecard" to help students select the best activities.

7. Follow through with the program of activities the group develops. Continuously make reference to it as the guideline for the chapter's activities, remembering though, that it can be changed, if necessary, through the parliamentary process.

VII. Application procedures:

1. The instructional activities in this problem area should apply directly to the FFA program. Each FFA member should be involved in one or more of the activities studied.

2. Committees should be organized to implement the plans discussed in class.

3. An FFA program of activities should be developed and entered in the Chapter Award Program.

4. The instructional program for Proficiency Awards, FFA Achievement Award and Sectional Fairs and Shows should be conducted so as to lead to applications to students' S.O.E. programs.

VIII. Evaluation:

1. Have each student develop an individual or personal plan for involvement in the FFA programs studied.

2. Collect and grade Student Worksheets.

3. Administer a pencil and paper test using the sample questions included in this problem area.

IX. References and aids:

1. Official FFA Manual (1980 edition) - National FFA Supply Service

2. Student Handbook - Production Credit Association or National FFA Supply Service

3. AV Materials from State FFA Office, Roanoke or National FFA Supply Service

   a. Food for America
   b. A Proficiency Award for You
   c. Journey to Safety and Safety Makes Sense
   d. Building our American Communities
   e. More than Profit
   f. FFA--Agriculture's New Generation
   g. FFA Unites Youth with Opportunities

4. Illinois Foundation FFA Annual Report available from the State FFA Office, Roanoke, Illinois 61561

5. FFA Activity Handbook and Chapter Guide to FFA Activities, available from National FFA Supply Service

6. Illinois FFA Advisors' Guide

7. Official FFA Catalog

8. Blue Illinois FFA notebooks containing state and national materials.

INFORMATION SHEET

CHAPTER AWARD PROGRAM

Procedures:

1. Submit a preliminary Program of Activities to the Section FFA President by October 31. It should include at least the following parts:
   a. List of chapter officers
   b. Budget
   c. Committees for the eleven divisions with goals and activities for each division

2. Submit a completed program of Activities and the National Chapter Award Program Report Forms (white form) to the Sectional FFA President by a date established by him or her. The National Report Forms consist of Form I which Chapters must submit if they wish to be rated as a Superior Chapter and Form II, required for Gold, Silver, Bronze or Honorable Mention at the State level. Both Forms I and II must be completed and submitted for State competition.

3. To apply for National recognition, a chapter must have received a State rating. Each State Association may submit 10% of their State Superior rated chapters for National competition.

4. If possible, the members of each committee should be in the same class to facilitate committee meeting time. Suggested activities for committees include:
   a. Vice-President should obtain a list of all members and group them by classes.
   b. Elect committee members and chairperson and finalize committee assignment.
   c. Evaluate last year's Program of Activities and make changes where needed.
   d. Have recorded the suggested changes in the Program of Activities. Complete a Committee Meeting Report Form.
   e. Make committee report at next FFA meeting.

INFORMATION SHEET

PROFICIENCY AWARD PROGRAMS

1. What is the purpose of the Proficiency Award Program?

   It provide incentives for students to develop high quality supervised occupational experience programs and record-keeping skills.

2. Who sponsors this program?

   National FFA Foundation and the Illinois FFA Foundation

3. What are the levels of competition where awards may be won?

   Local chapter level
   Sectional level
   District level
   State level
   Regional level
   National level

4. What three categories or classifications can be used to group these award programs?

   Production awards
   Non-production awards
   Placement awards

5. What proficiency award programs fall into these groups?

   Production awards:

   Beef Production
   Corn Production
   Crop Production
   Crop Specialty
   Dairy Production
   Diversified Livestock Production
   Floriculture
   Fruit & Vegetable Production
   Livestock Specialty
   Poultry Production
   Sheep Production
   Small Grain Production
   Soybean Production
   Swine Production

   Non-production awards:

   Agricultural Electrifiction
   Agricultural Mechanics
   Agricultural Processing
   Fish and Wildlife Management
   Forest Management
   Home and Farmstead Improvement
   Horse Proficiency
   Nursery Operations

Non-production awards (cont'd.):

Outdoor Recreation
Safety
Soil and Water Management
Turf and Landscape Management

Placement awards:

Agricultural Sales & Service
Horse Proficiency
Nursery Operations
Placement in Agricultural Production
Turf and Landscape Management

6. Who is eligible to compete for these awards?

Junior or senior FFA members currently enrolled in a vocational agriculture course are eligible. In addition, applicant must have completed at least one year in vocational agriculture. Schools may have only one application in each area. See Illinois FFA Advisor's Guide for other information on eligibility.

7. What awards are given to winners?

Local - Chapter winner medal for each applicant in the section contest
Section - Two plaques for each section winner, one for the winner, and one for the chapter
District - Two district winner bars for first place
State - Two state winner plaques for first place. Cash awards are provided for winners by State and National FFA Foundations.

8. Where can I obtain additional information?

Student Handbook - pp. 83-95
Illinois FFA Advisor's Guide - pp. 26-37
Agricultural Proficiency Awards Reference in the FFA Activity Handbook

INFORMATION SHEET

FFA ACHIEVEMENT AWARD PROGRAM

1. What is the Achievement Award Program?

   It is an opportunity for every individual FFA member to earn recognition for work they do in their S.O.E.P. activities. FFA members earn recognition for meeting performance standards that they and their advisors set up together. It is designed by and for the individual member. He or she competes against a performance standard, not against others.

2. How does it relate to S.O.E.P.?

   It examines four aspects of the members' S.O.E.P. projects. They are: an exploration of careers in the project area, skills needed for a career in that area, leadership opportunities in the same subject area, and related safety practices.

3. What is the first step?

   The FFA advisor and member together develop performance checklist as in the sample.

4. What follows?

   As the member completes each activity, the advisor initials the checklist. When 80% or more have been achieved, the member is presented an Achievement Award Certificate from the National FFA Organization.

5. Where can more information be obtained?

   FFA Achievement Award Program Booklet in the FFA Activities Handbook.

INFORMATION SHEET

COOPERATIVE ACTIVITIES PROGRAM

1. What is the Cooperative Activities Program?

   It is a program designed to give FFA members an understanding of cooperatives as a type of business in the American private enterprise system. It is supported by the Illinois Farm Bureau and Affiliates.

2. What kinds of cooperative activities are involved?

   a. Cooperative buying/financing
   b. Cooperative selling
   c. Cooperative services
   d. Cooperating with other groups

3. What are some examples in each of these categories that other FFA chapters have tried?

   a. Cooperative buying/financing

      Students purchased parts and supplies for shop class through a chapter cooperative

      Chapter purchased unassembled auto trouble lights. Assembled them in ag. mechanics class and sold to members for a slight profit but substantially below retail.

   b. Cooperative selling

      Chapter members sold flowers from projects in greenhouse and purchased new equipment

   c. Cooperative services

      Chapter owns and rents equipment to members for preparing show animals.

      Chapter collected and tested soil samples for area farmers

   d. Cooperating with other groups

      Chapter members assisted Farm Bureau, Country Companies and County Sheriff in property I.D. program

4. What awards are available for competing?

   a. Certificates of participaton for local chapters meeting minimum requirements
   b. Plaques and an award tour for sectional winners and the top five chapters in the state.
   c. The award tour will either be the site of the National Institute on Cooperative Education which alternates among State land grant universities or a suitable tour of various nearby agricultural cooperatives. Each chapter selects deserving member(s) to attend.

5. How do we get started with the program?

   a. The whole membership would review Part I and II of the Cooperative Activities Program award application. This gives an overview of everything the group is expected to do.

   b. Select a committee and committee chairperson to organize the program.

6. Where can we get more information?

   a. 1981-82 Cooperative Activities Program Booklet available from State FFA Office in Roanoke
   b. Films available are:
      "Cooperatives - The Farmer's Way"
      "How People Do Business in our Democracy"
      "Capper - Volstead"

      Order from:

      Illinois Association FFA
      204 Husseman P.O. Box 466
      Roanoke, IL 61561

INFORMATION SHEET

FB-FFA HERITAGE PROGRAM

1. What is the FB-FFA Heritage Program?

   It is a competitive activity designed to inform young people about their heritage and their rights and responsibilities as citizens. It is a joint venture of the Illinois Farm Bureau and Illinois FFA and is offered only in Illinois.

2. What aspects of our heritage and citizenship does the program have us examine?

   a. Agricultural heritage
   b. Flag
   c. State and National elected officials
   d. Election process
   e. Governmental organization
   f. Historical people and places

3. What are some examples of chapter activities in the FB-FFA Heritage Program?

   a. Agricultural Heritage - A community history book was written. An FFA chapter developed and preserved areas of native vegetation
   b. Flag - A chapter sponsored poster contest in grade school on the history of the flag.
   c. Contacting State and Federal officials - A chapter maintained voting record of state and federal representatives.
   d. Public elections - FFA chapter members conducted telephone crusade to Get-Out-the-Vote campaign.
   e. Local Government - FFA members attended County Board meetings.
   f. Historical Sites - A chapter presented program on the history of school buildings in the district
   g. Community Heritage - FFA members assisted in restoring community landmarks

4. What awards are available for competing?

   a. Certificates of Participation for local chapters meeting minimum requirements
   b. Plaques for sectional winners
   c. Plaques and an award tour for top five chapters in the state. Each chapter selects representative members to go on the tour.

5. Where does our FFA chapter begin if we want to participate in this activity?

   a. Review Part I and Part II of the Heritage Program Award Application. This gives an overview of everything expected to be completed.

b. Select a committee and committee chairperson to organize the program.

6. Where can we get more information on the FB-FFA Heritage Program?

   1981 - 1982 Heritage Program available from State FFA Office in Roanoke.

INFORMATION SHEET

BUILDING OUR AMERICAN COMMUNITIES (BOAC)

1. What is BOAC?

   BOAC is a special project of the National FFA Foundation which is designed to encourage FFA members to study the roles of community leaders, local organizations and local government. It was started in 1971 and is sponsored by the R. J. Reynolds Industries, Inc. of Winston-Salem, N.C.

2. What are the purposes of BOAC?

   a. To give young people an understanding of how community action and progress take place.

   b. To give young people an understanding of their community leaders' jobs.

   c. To encourage them to find out the aims and purposes of the organizations in their community.

   d. To encourage them to study the community and identify its economic, social and environmental needs.

   e. To show young people how they can help their community leaders make their home community a better place to live and work.

3. What awards are available?

   a. All qualified participants receive "area award" plaques from the National FFA Foundation.

   b. State winners (top 50% of area participants) receive a State award plaque and appropriate Gold, Silver, or Bronze spur.

   c. First place chapter in state receives Governor's Citation.

   d. National winners (top 10% of area participants) will be judged by National FFA for Gold, Silver, and Bronze Emblem. These entries receive a National BOAC award plaque with appropriate metal spur.

   e. First place chapter in nation receives the National Citation.

4. How does our chapter start a BOAC program?

   a. Select a BOAC committee and committee chairperson. This may be the community service committee you selected while planning your program of activities or it may be a special committee.

   b. Committee members should read "Community Development - FFA Style" which will help you:

(1) to define your community
(2) to identify your community needs
(3) to select community development activities
(4) to gather and anlayze solutions
(5) to explore alternative solutions
(6) to organize the project you select
(7) to evaluate the results

5. Where can we get more information?

"Building Our American Communities" in the Student Activities Handbook "Community Development-FFA Style" booklet and slide and tape series from, the BOAC Department, National FFA Center, P.O. Box 15160, Alexandria, VA 22309.

INFORMATION SHEET

CHAPTER SAFETY AWARD

1. What is the purpose of the Chapter Safety Award Program?

   To assist the FFA chapters in taking a more active role in safety training.

2. How can a local program be started?

   The safety program should begin with an instructional unit in vocational agriculture. Safety should be taught to all students. The FFA Award Program should be an outgrowth or a product of the instructional program.

2. How does the FFA get involved?

   Safety programs should be planned in the FFA Program of Activities. A committee should be charged with the responsibility of organizing and conducting safety projects.

4. What type of awards are provided by the National FFA Foundation?

   State Superior Award
   National Bronze Emblem Award
   National Silver Emblem Award
   National Gold Emblem Award

5. What awards are provided at the sectional and state levels?

   Sectional winners receive a plaque from the Illinois Foundation FFA. The state winner receives a plaque which is issued to chapters receiving the Superior Safety rating for the first time.

6. How can a local FFA chapter enter this program?

   Submit a Form I application to the Section FFA president by April 15 to apply for Superior Safety Chapter recognition. To apply for the Sectional Chapter Safety plaque, and for state and national recognition, submit a Form II application at the same time. Forms I and II are sent to schools in the fall of each year along with other materials from the State FFA Office in Roanoke.

7. Where can we obtain more information or help?

   Illinois FFA Advisors' Guide, pp. 17-18
   National FFA Chapter Safety Award Handbook in the FFA Activity Handbook
   FFA Advisor's Handbook, pp. 169-173
   Materials from State FFA Office, Roanoke, Illinois

INFORMATION SHEET

FOOD FOR AMERICA

1. What is the Food for America program?

In the Food for America program, FFA chapters tell the story of American food production to elementary school children. It is sponsored by the National FFA Organization which provides all the necessary materials for conducting the activity.

2. What materials are available?

Free of charge to the FFA Chapter are: "The Food for America Resource Book." containing visual aids, activity sheets, lesson plans and detailed instructions for presenting the program; a film "Food from Farm to You," loaned by the Farm Film Foundation; Food for America poster, and a prepared news release. There are other aids available at a cost.

3. Why is it a good activity?

It gives FFA members an opportunity to share their knowledge with children and to get some experience presenting information to others. It is also a very good community service project.

4. How do we get involved?

   a. Organize a Food for America Committee

   b. Committee members read the Food for American fold-out found in the "FFA Student Activities Handbook." The steps for organizing and order forms are found in the fold-out.

WORKSHEET

PRELIMINARY PROGRAM OF ACTIVITIES APPLICATION

________Chapter

I. Officers

President ______________________________

V. President ______________________________

Secretary ______________________________

Treasurer ______________________________

Reporter ______________________________

Sentinel ______________________________

II. Budget

Expected money intake ______________________________

Expected money spent ______________________________

Ways of raising money ______________________________

III. Committees

A. Supervised Ag Occupations Experience

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________________________

____

4. Ways and Means ______________________________

____

B. Cooperation

1. Chairman ______________________

2. Members ______________________

3. Goals ______________________________________

____

4. Ways and Means ______________________

____

____

C. Community Service

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________

4. Ways and Means ______________________

____

____

D. Leadership

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________

____

4. Ways and Means ______________________

____

____

E. Earnings, Savings, and Investments

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________________

____

4. Ways and Means ______________________________

____

____

F. Conduct of Meetings

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________________

____

4. Ways and Means ______________________________

____

____

G. Scholarship

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ______________________________

____

4. Ways and Means ______________________________

____

____

H. Recreation

1. Chairman ______________________

2. Members ____________________

____

____

3. Goals ____________________________________

____

4. Ways and Means ____________________________

____

____

I. FFA Public Relations

1. Chairman ____________________

2. Members ____________________

____

____

3. Goals ____________________________________

____

4. Ways and Means ____________________________

____

____

J. Participation in State and National Activities

1. Chairman ____________________

2. Members ____________________

____

____

3. Goals ____________________________________

____

4. Ways and Means ____________________________

____

K. Alumni Relations

1. Chairman ______________________

2. Members ______________________

____

____

3. Goals ____

____

4. Ways and Means ______________________________

____

____

STUDENT WORKSHEET

SECTIONAL FFA FAIRS AND SHOWS PLANNING FORM

1. Name of fair or show ______________________________

2. Location ____________________ Date ______________

3. Types of exhibits allowed ____________________________

4. Who may exhibit? ____________________________

5. Reasons for exhibiting ____________________________

6. Cost of entry fees ____________________________

7. Premiums offered ____________________________

8. I would like to exhibit the following: ________________

STUDENT WORKSHEET

FFA ACHIEVEMENT AWARD PLANS
FOR
ANIMAL PRODUCTION

Name ____

Challenge: To develop the skills, abilities and attitudes necessary to enter a job in the broad field of Animal Production.

Awards: An Achievement Award Certificate will be awarded to you for satisfactorily completing 80% of the skills and tasks you have developed in each of the four areas listed below. When you have satisfactorily completed an activity, ask your evaluator to initial it.

Evaluator's Initials

Career Exploration

Visit and prepare a writen or an oral report on each of the following:

1. A local feedlot or dairy __________
2. A local dairy processing plant __________
3. The agricultural department of a community or state college __________
4. Local agricultural extension agent __________
5. Local veterinarian __________
6. A sale at a livestock auction yard __________
7. __________
8. __________
9. __________

Other:

10. Work for fifteen hours on a livestock or dairy farm __________
11. Prepare a livestock market outlook report __________
12. Fill out a job application __________
13. Prepare a written report on the opportunities, entrance requirements, working conditions, etc., of two jobs in the field of animal science __________
14. __________
15. __________
16. __________

Career Skills

Identify and des[illegible] use of the following:

1. Fifteen veterinary instruments
2. Twenty livestock handling tools
3. Twenty feed ingredients
4. Fifteen cuts of meat and ten dairy products
5.
6.
7.

Identify and describe:

8. Five dairy breeds
9. Fifteen beef breeds including exotics
10. Five breeds of sheep
11. Five breeds of swine
12.
13.
14.

When do you expect to complete this project? ______________________________

Demonstrate a job entry level of proficiency in:

15. Castrating cattle, sheep and swine
16. Administrating sub-cutaneous, intra-muscular and intra-venous injections
17. Dehorning and banding or tatooing
18. Grading live market animals
19. The management of a boar, bull or ram
20. The care of new born pigs, calves or lambs
21. The care of breeding gilts, cows or flock of sheep
22.
23.
24.

Leadership Development

1. Participate in four chapter activities
2. Serve as a chapter officer
3. Serve on a chapter committee
4. Participate in a sectional or regional FFA activity
5. Help a younger member with their animal project
6. Give a demonstration of a livestock management skill to your class
7. Participate in a community service project
8. Attend and participant in three chapter meetings
9. Assist in one chapter fund raising activity
10. Participate in a local or area fair
11.
12.
13.

Other

14. Assist one Greenhand with a Supervised Occupational Experience Program ________
15. Recruit one new FFA member ________
16. Submit approved S.O.E. Record Book for local and sectional competition ________
17. ________
18. ________

Safety Practices

1. Demonstrate safe use of ten livestock tools ________
2. Demonstrate safe handling of livestock ________
3. Inspect your own or a local farm and report on the safety hazards found ________
4. Draw or illustrate five safety precautions to observe while working with small animals ________
5. Lead a class discussion on farm safety ________
6. Write a report on the safety practices involved in raising livestock ________
7. Demonstrate a knowledge of fire control practices ________
8. ________
9. ________
10. ________

To be completed by the Vocational Agriculture Instructor at the end of this course.

I do hereby certify that ________________________ has successfully achieved 80% of the skills and jobs in each of the areas checked below:

__ Career Exploration
__ Career Skills
__ Leadership Development
__ Safety Practices

____
Advisor's Signature Date

These plans are not designed to meet the needs of any particular student. They are only examples. When developing the individual plans, the student's motivation and ability should be considered.

STUDENT WORKSHEET

ACTIVITY SELECTION SCORECARD

Score activity on a scale of 1 = below average, 2 = average, 3 = above average for each of the following items.

1. Has educational values? ____________________
2. Develops leadership? ____________________
3. Requires cooperation of members? ____________________
4. Stimulates interest and motivates members? ____________________
5. Promotes FFA and vocational agriculture? ____________________
6. Financially possible? ____________________
7. Renders service to community? ____________________
8. Contributes to development of S.O.E. programs? ____________________
9. Develops member's pride? ____________________
10. Contributes to personal development? ____________________
11. Contributes to improvement of agriculture? ____________________

COMPONENTS OF A PROGRAM OF ACTIVITIES

SECTION I:

MEMBERSHIP ROSTER (ACTIVE AND HONORARY)

SECTIONAL , STATE AND NATIONAL OFFICERS

STANDING COMMITTEES

SECTION II:

CALENDAR OF ACTIVITIES

SECTION III:

BUDGET

SECTION IV:

PROGRAM FOR EACH OF ELEVEN STANDING COMMITTEES

Eleven Standing Committees of a Good Program of Activities

1. Supervised Agricultural Occupational Experience
2. Cooperation
3. Community Service
4. Leadership
5. Conduct of Meetings
6. Earnings, Savings, and Investments
7. Scholarship
8. Recreation
9. Public Relations
10. Participation in State and National Activities
11. Alumni Relations

CHAPTER PROGRAM OF ACTIVITIES PLANNING SHEET

DIVISION ____________________

DIVISION OBJECTIVE ____________________

____

____

COMMITTEE CHAIRMAN ____________________

MEMBERS ____________________

____

____

A. Activity/B. Goals	Ways & Means	Budget	Completion Schedule	
			Goal	Completed

COMMITTEE ACTIVITY PLANNING SHEET

COMMITTEE ____________ OFFICER ____________

CHAIRMAN ____________ MEMBERS ____________

SECRETARY ____________ ____________

OTHER ____________ ____________

PROJECT ____________________

STARTING TIME ____________________

COMPLETION TIME ____________________

Planned Activities	Members Responsible	Cost	Start Time	Completion Time
1.				
2.				
3.				
4.				
5.				

SOME INDIVIDUAL AND CHAPTER AWARD ACTIVITIES

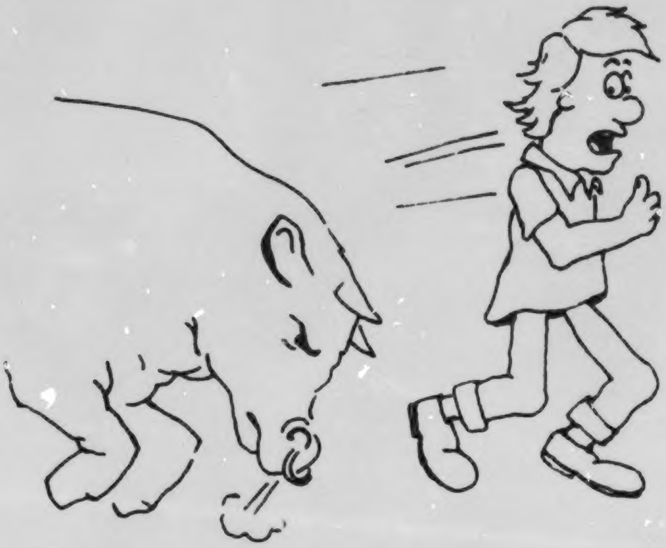
1. NATIONAL CHAPTER AWARD (PROGRAM OF ACTIVITIES)
2. FFA ACHIEVEMENT AWARD
3. PROFICIENCY AWARD
4. SECTIONAL FAIRS AND SHOWS
5. FB-FFA COOPERATIVE ACTIVITIES
6. FB-FFA HERITAGE PROGRAM
7. BOAC
8. CHAPTER SAFETY
9. FOOD FOR AMERICA

Illllinois Foundation Awards

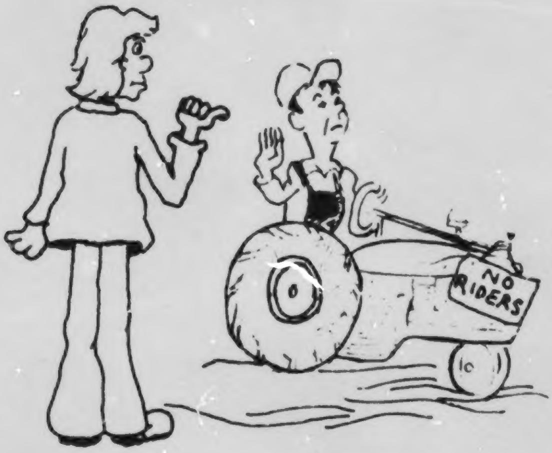
1. Star Farmer of Illinois
2. Star Agribusinessman of Illinois

3. Agricultural Electrification
4. Agricultural Mechanics
5. Agricultural Processing
6. Agriculture Sales and/or Service
7. Beef Production
8. Corn Production
9. Crop Production
10. Crop Specialty
11. Dairy Production
12. Diversified Livestock Production
13. Fish and Wildlife Management
14. Floriculture
15. Forest Management
16. Fruit and/or Vegetable Production
17. Home and Farmstead Improvement
18. Horse Proficiency
19. Livestock Specialty
20. Nursery Operations
21. Outdoor Recreation
22. Placement in Agricultural Production
23. Poultry Production
24. Safety
25. Sheep Production
26. Small Grain Production
27. Soil and Water Management
28. Soybean Production
29. Swine Production
30. Turf and Landscape Management

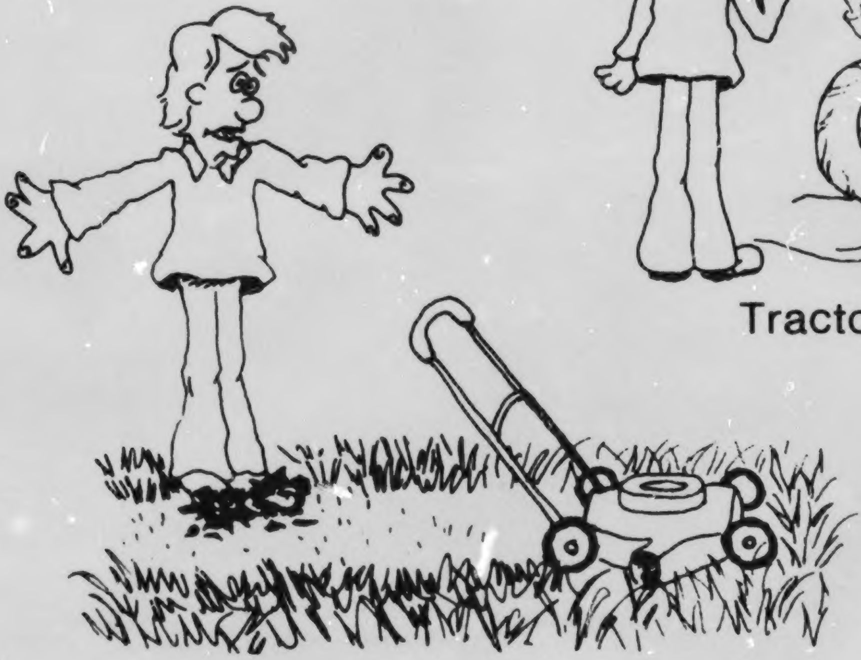
CHAPTER SAFETY PROJECTS



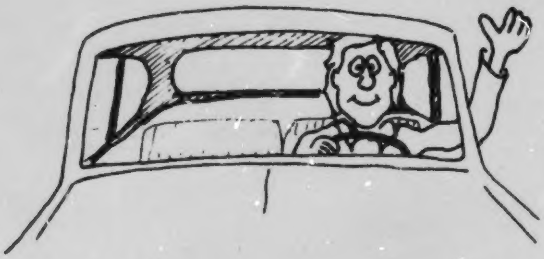
Animal Safety



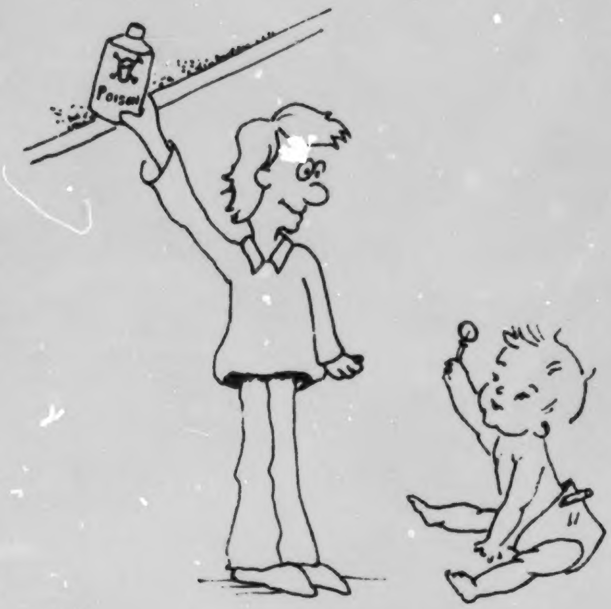
Tractor Safety



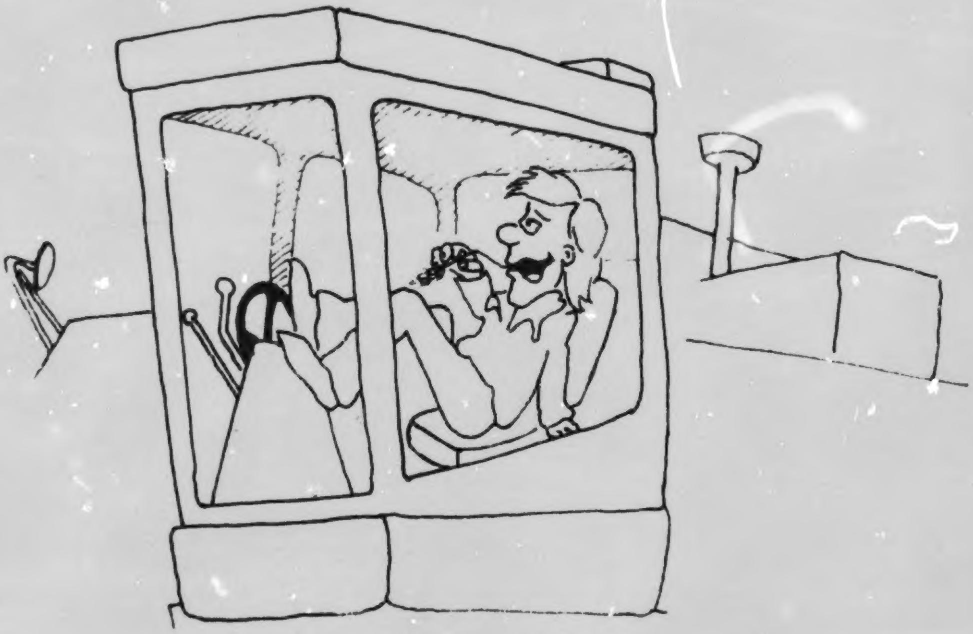
Lawnmower Safety



Highway Safety



Chemical Safety



Harvest Safety

DISCUSSION GUIDE FOR TRANSPARENCIES

I. Transparency No. 1 - Components of a Program of Activities

1. Explain to the student what a program of activities is and why it is important.

2. Discuss how a plan is essential to an efficient and effective operation of any kind.

3. Use additional information available in "A Guide for Use in Planning Your FFA Chapter Program of Activities."

II. Transparency No. 2 - Eleven Standing Committees of a Good Program of Activities

1. Discuss each of the eleven areas so that students understand what is involved in each one. The Student Handbook gives suggested activities for each area as does "A Guide for Use in Planning Your FFA Chapter Program of Activities."

III. Transparency No. 3 - Chapter Program of Activities Planning Sheet

1. Use transparency to explain to class the basic format for a program of activities.

2. Ask class members to suggest appropriate information to use in blank spaces. Fill in blank spaces as you explain the format to the class.

IV. Transparency No. 4 - Committee Activity Planning Sheet

1. Use an example to show class how to complete this sheet.

2. Explain to class the importance of making written plans for committee work.

V. Transparency No. 5 - Some Individual and Chapter Award Activities

1. Using Information Sheet, discuss each activity.

2. Decide which ones will be pursued and how they can fit into this program of activities.

VI. Transparency No. 6 - Illinois Foundation Awards

1. Discuss proficiency award areas and help students focus in on their areas of interest.

2. Relate S.O.E.P. Program, Achievement Award Program and Proficiency Award Program

VII. Transparency No. 7 - Chapter Safety Program

1. Review each of the suggested areas for safety project.

2. Give the class examples of possible projects.

3. Ask class members to identify safety projects which they might carry out.

TEACHERS' KEY

SAMPLE TEST QUESTIONS AND ANSWERS FOR ACTIVITIES IN THE FFA

1. True (+) False (0):

   + A. The Program of Activities plan is a worthwhile undertaking for my FFA chapter because it will help us to function more effectively and efficiently.

   + B. It is possible to win a sectional, state and national award for submitting a Program of Activities proposal.

   + C. The Proficiency Award relates to my S.O.E.P. project.

   + D. The Achievement Award relates to my S.O.E.P. project.

   0 E. The FB-FFA Heritage Program and FB-FFA Cooperative Activities Cooperative Activities Program are nationally sponsored.

   + F. BOAC has to do with community development.

   + G. Making safety a part of each unit of agriculture instruction is an objective of the Chapter Safety Award.

   + H. Food for America is an educational program for elementary school children.

   0 I. Sectional fairs and shows are only for FFA members with livestock S.O.E.P. projects.

2. Answer the following questions:

   A. Identify the major standing committees in your chapter's Program of Activities.

   B. Give examples of activities or responsibilities for three of the above committees.

   C. Give three examples of proficiency awards available in the production group, the non-production group and the placement group. (Nine examples total).

   D. How is the Achievement Award Program related to the Supervised Occupational Experience Program? Include in your answer the four areas of concern in the Achievement Award Program.

3. Do one of the following exercises:

   A. Give an example of a cooperative buying/financing activity you would like to see your club do or at least think about.

B. Give an example of an activity you would like to see your chapter do that would qualify for the FB-FFA Heritage program.

C. What is a community problem you think your chapter could do something about as a BOAC project?

D. What is a safety precaution that is normal routine for you but one that you could share with others of less experience? What are the points of safety you would want to cover in telling someone else?

UNIT B: LEADERSHIP AND CITIZENSHIP

PROBLEM AREA: DEVELOPING LEADERSHIP SKILLS

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth-grade or second-year students in agriculture who have received instruction in the leadership and citizenship problem areas included in Core I. Students should have at least one year of instruction in vocational agriculture and FFA before this material is taught to them. Approximately three days could be devoted to this problem area; however, the instruction would not have to be provided in one block of time. The teacher may wish to discuss the state and national FFA conventions, summer camps and other activities immediately preceding the time when students will be participating in these activities.

Problem areas on public speaking and parliamentary procedure are included in Illinois Core I. Some teachers may not have taught all of these problem areas to freshmen and may prefer to include some instruction in these two areas in the sophomore year. If this is done, this instruction could be scheduled along with this problem area.

Information in Chapter V of the FFA Student Handbook can be used to supplement the material in this problem area.

CREDIT SOURCES:

These materials were developed through a funding agreement, R-33-32-D-0542-388 with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education, Research and Development Unit, 100 North First Street, Springfield, Illinois 62777. Opinions expressed herein do not reflect, nor should they be construed as policy or opinion of the State Board of Education or its staff.

The materials included in this problem area were prepared by David Shockey and Paul Hemp and field tested by the Rural and Metropolitan Field Test Teachers. Dr. Joe Townsend, Illinois State University, reviewed the original draft of the field test packet and provided some transparencies, Information Sheets on Conducting Meetings and the Student Worksheet on Committees. Information sheets on "Responsibilities of Committee Members" and "Steps in Planning" were taken from the field test copy of the Illinois Vocational Student, Chapter Officer Handbook, Department of Adult, Vocational and Technical Education, Springfield, Illinois.

TEACHER'S GUIDE

I. Unit: Leadership and citizenship

II. Problem area: Developing leadership skills

III. Objectives: At the close of this problem area, the students will be able to:

1. Identify at least 75% of the requirements for each of the four FFA degrees.
2. List a purpose and identify the persons eligible to attend the following: State FFA Convention, National FFA Convention, FFA Leadership Camp, and FFA Leadership Training Schools.
3. Name three types of FFA committees and describe their role and function.
4. Enumerate five FFA activities where leadership can be developed or practiced.
5. List at least six leadership skills and tell why they are important.
6. Participate effectively as a committee member by serving successfully on at least one committee.

IV. Suggested interest approaches:

1. Ask class to name national or state leaders in agriculture and FFA.
2. Have class name the traits they think are important in a leader. Use Student Worksheet, "Identify the Lender" to promote interest and discussion.
3. Ask class to react to the following slogans:
    a. "A leader is born, not made."
    b. "He is a natural-born leader."
    c. "The job often makes a leader."
4. Ask class to name leadership positions they have held such as club officer, group leader, person in charge of a work crew.
5. Lead class in a discussion of how many leaders an FFA chapter can have and whether or not all members can be leaders at one time or another.

6. Develop several scenarios where leadership is required, for example, a child drowning at a beach, a person choking in a restaurant, fire breaking out in a crowded auditorium.

V. Anticipated problems and concerns of students:

1. What is a leader? a follower?
2. What traits does a leader have?
3. How can I develop leadership skills?
4. How can I organize my time and my work?
5. How does a leader motivate others?
6. Why should leaders delegate or assign responsibility?
7. Why do some people fail as leaders?
8. What are some FFA programs and activities where we can develop leadership skills?
9. How can I be a successful committee chairperson? a successful committee member?
10. How can I advance in the FFA?
11. What are the degree requirements?
12. How should the FFA jacket be worn?
13. What is the relationship between personal appearance and successful leadership?
14. What makes a successful FFA banquet?
15. What are the purposes of an FFA banquet?
16. What activities can you participate in at the State FFA convention? at the National FFA convention?
17. How can one gain poise and confidence in conversation?
18. How can I tell a good story?
19. What is the proper way to introduce people?
20. What are the basic rules of good telephone procedure?

VI. Suggested learning activities and experiences:

1. Have class members establish class goals and personal goals for this problem area.
2. Lead class in an identification of problems and concerns. List on chalkboard or flip chart.
3. Select problems which are covered in available reference material and have students search for solutions.
4. Handout and discuss information sheet "Procedures for Chapter Members," have students practice the exercise.
5. Distribute Information Sheet on "What is Leadership?" for students to read.
6. Show slide set "FFA Leaders Speak - Leadership" available from the Roanoke office.
7. Use information sheet "Procedure for President to Follow," to provide student practice.
8. Use FFA Transparencies on Degree Requirements to explain how students can advance in the FFA.
9. Discuss State FFA Convention with class. Use Transparency on State Convention to plan for student involvement. Show and discuss VAS Filmstrip 1010, "Behind the Scenes of the Illinois FFA Convetion."
10. Show film "Convention Time-FFA" available from Venard Films, LTD, Box 1332, Peoria, IL 61654.
11. Use transparencies on National FFA Convention, Illinois FFA Leadership Camp and Leadership Training School to make chapter plans for these events.
12. Distribute Information Sheet and use Transparency on Chapter Banquets to discuss and plan FFA banquet.
13. Show class slide set "Planning a Successful FFA Banquet" available from Roanoke office.
14. Use Information Sheets on "Committee Work," "Reporting, Planning and Responsibilities" and the transparency on committee work to discuss proper use of committees.
15. Discuss other aspects of leadership development such as grooming, use of the FFA jacket and chapter elections.
16. Have class members complete Student Worksheet on "Committees."

VII. Application procedures:

1. Encourage all eligible students to apply for FFA degrees.
2. Participate in national and state conventions.
3. Encourage students to participate on an FFA Committee.
4. Encourage students to assume leadership roles in other school and community organizations.
5. Sponsor FFA-Parent Banquet.
6. Attend FFA Leadership School and Leadership Camp.

VIII. Evaluation:

1. Prepare pencil and paper test and administer to class at close of problem area.
2. Develop point system to give students credit for leadership activities.
3. Observe changes in leadership roles assumed by class members.

IX. References and aids:

1. Official FFA Manual
2. FFA Student Handbook from PCA, Chapter IV.
3. Slide sets from State FFA Office, Roanoke, IL:

   "Planning a Successful FFA Banquet"

   "FFA Leaders Speak - Leadership"

4. Film Entitled "Convention Time - FFA" available from Venard Films, Peoria, IL.
5. VAS Transparencies on FFA Leadership, 1-10.
6. Information Sheets included with this problem area are as follows:

   a. Do You Just Belong?
   b. Greenhand Degree Requirements
   c. Application for Chapter Degree
   d. State FFA Degree Requirements
   e. Rules for Wearing the Official FFA Jacket
   f. Chapter Banquets
   g. Committee Work

- h. Steps in Planning
- i. Responsibilities of Each Committee Member
- j. Committee Meeting Reports
- k. Officer Application
- l. What is Leadership?
- m. Procedure for President to Follow
- n. Meeting Procedures for Chapter Members

7. Student Worksheets on:

   - a. Committees
   - b. Identify the Leader

8. Teacher's Key Student Worksheet "Committees"

INFORMATION SHEET

DO YOU JUST BELONG?

Are you an active member,
The kind that would be missed?
Or are you just contented
That your name is on the list?

Do you attend the meetings,
And mingle with the flock?
Or do you stay at home
And criticize and knock?

Do you ever go to visit
A member who is sick?
Or leave the work to just a few
And talk about the clique?

There's quite a problem scheduled
That I'm sure you've heard about,
And we will all appreciate it
If you'll come and help us out.

So come to the meeting often
And help with hand and heart;
Don't just be a member,
Dig in, and do your part.

Think this over, will you?
You know right from wrong;
Are you an active member
Or do you just belong?

Author Unknown

INFORMATION SHEET

GREENHAND DEGREE REQUIREMENTS

ARE YOU -

1. Enrolled in a vocational agriculture course?
2. Familiar with the purposes of FFA?
3. Familiar with the FFA program of activities?

DO YOU -

1. Have a satisfactory supervised occupational experience program planned for this year?
2. Know the proper use of the FFA jacket?
3. Know the FFA code of ethics?
4. Have access to an FFA Manual?
5. Have a written application prepared?

CAN YOU -

1. Recite and explain the FFA motto, creed and salute?
2. Identify the parts of the FFA emblem?
3. Identify the historical highlights of the FFA?

INFORMATION SHEET*

APPLICATION FOR CHAPTER DEGREE

(To be completed by the candidate applying for the degree and submitted to the chairperson of the degree committee)

		Answer "Yes" or "No"
1.	Have you satisfactorily completed at least one semester of instruction in vocational agriculture?	________
2.	Do you hold the Greenhand degree?	________
3.	Are you familiar with the purposes and program of activities of your chapter?	________
4.	Are you familiar with the chapter constitution?	________
5.	Are you familiar with at least five parliamentary procedure abilities?	________
6.	Have you led a group discussion for at least 15 minutes?	________
7.	Have you earned at least $50 from your supervised agricultural experience program?	________
8.	Have you actively participated in chapter activities?	________
9.	Have you paid your dues for the current year?	________
10.	Are you now enrolled in a vocational agriculture class?	________
11.	Do you now have a satisfactory supervised agricultural experience program? Describe briefly your program.	________

____

____

____

Score on Chapter FFA Test ________

Scholastic average in all subjects ________

*Adapted from the FFA Advisor's Handbook published by the National FFA Center

Date: _______________, 19__ Signed: ____________________
Candidate

Approved by the Degree Committee: ____________________, Chairman

____________________, Advisor

Degree conferred on ____________________, 19___

(To be placed in member's file)

INFORMATION SHEET

STATE FFA DEGREE REQUIREMENTS

DO YOU -

1. Have the Chapter Farmer (FFA) Degree?
2. Have at least two years of FFA membership?
3. Meet FFA scholastic requirements?
    a. Top 40% of your class or,
    b. A grade point average of 85.
    c. 3.5 on a 5 point scale or 2.5 on a 4 point scale.

HAVE YOU -

1. Earned and invested $750 or worked at least 750 hours in an S.O.E.P.
2. Helped plan and carry out the Program of Activities?
3. Participated in five (5) FFA activities above the chapter level?

CAN YOU -

1 Demonstrate leadership ability?

2. Meet other requirements of Illinois FFA?

INFORMATION SHEET*

RULES FOR WEARING THE OFFICIAL FFA JACKET

1. The jacket should be worn for all FFA events and during State and National FFA Week.
2. When worn on official occasions, the zipper should be fastened to the top, the collar turned down, and the cuffs in place and buttoned.
3. The member represents the organization when wearing the jacket. His/her conduct will reflect on the organization. A member should not smoke in public while wearing the FFA jacket or conduct him/herself in any way that will discredit the FFA and the school.
4. The emblems should be removed if membership in the FFA is discontinued.
5. Only the owner of the jacet should wear it. Members should not allow friends to use the jacket if worn in public, except when a student not owning a jacket is in need of a jacket while representing the chapter.
6. The jacket should be clean when worn in public.
7. Only the FFA pins representing the member's present degree, the highest office held and highest award earned, should be worn on the left side above the name. No other jewelry, school letters or insignia of other organizations should be attached to or worn on the jacket.

I ______________________________ do hereby agree to wear my official FFA jacket in accordance with the above provisions.

Witnessed

____
Chapter President

____
Chapter Secretary

Date ______________________________

Signed ____________________________

---

* Taken from the FFA Advisor's Handbook published by the National FFA Center.

INFORMATION SHEET*

CHAPTER BANQUETS

DO...

- Use opening and closing ceremonies.
- Invite the local editor, and radio and TV representatives.
- Invite people who have made outstanding contributions to vocational agriculture and the FFA.
- Order banquet supplies 8-10 weeks before the banquet from the FFA Supply Service. FFA Foundation awards, which are provided free to the chapter, including the "Award Certificate" should be obtained from the State FFA Office.
- Use RSVP invitations but do not try to use placecards except for the head table.
- Have ushers who are properly instructed. Always fill up the tables directly in front of the head table first. If there are to be empty chairs, don't advertise them by having them right in front of the speaker's rostrum.
- Hold the time to a maximum of two and one half hours start to finish.
- Use FFA placemats and, if possible, the colorful FFA paper cups, etc. that can be ordered from the FFA Supply Service. Set up displays featuring vocational agriculture and FFA projects.

DON'T...

- Have members introduce their parents individually unless it is a very small banquet in a room with excellent acoustics. It is time consuming, and nobody can hear what is being said.
- Use poorly prepared programs. If you cannot get a good, neat job of duplicating, you are better off without any programs at all.
- Take the banquet as an opportunity for the advisor to be on display. You should turn the show over to the members and keep your activities to a minimum.
- Show films or slides at the banquet unless facilities are such that everyone can both see and hear.
- Initiate Greenhands or Chapter Farmers at the banquet. One initiation ceremony, the Honorary Chapter degree, is enough.
- Allow "dead" spots that seem to drag on forever. If you have an FFA band or accordionist, have this portion of the program while the tables are being cleared.
- Introduce guests without a prepared list. If you miss somebody, they are not likely to be amused.

DO...

DON't...

- Have a master of ceremonies try to be funny. Leave that to the professionals. Nine times out of ten the stories fit one of the two categories: (a) they aren't funny (b) they are in poor taste.
- Seat people so that they have their backs to the head table.
- Assign special speaking roles to chapter officers. They already are on the program. Distribute the responsibility. Is there any special reason why the President has to be the M.C.?
- Have those with speaking roles sitting far away from the rostrum.

INFORMATION SHEET

COMMITTEE WORK

Three types of committees are:

1. Executive Committees
2. Standing Committees
3. Special (ad hoc) Committees

The executive committee is usually composed of the officers and, in some cases, chairpersons of the standing committees. The executive committee should provide leadership for the chapter but should not control the group or dominate it. It should lead, not dictate. The executive committee should meet a week prior to each chapter meeting to plan the agenda and to prepare for a successful meeting.

Each FFA chapter should have at least eleven standing committees. These committees correspond with the eleven major sections of the FFA program of activities. The Vice-President is in charge of the program of activities, and for this reason, works closely with the eleven standing committees. All chapter members should be on at least one standing committee. Members should be asked to state their preferences and final selecton should be made by the committee chairperson and the executive committee. Each committee should include members from various grade levels; however, when arranging meeting times is a serious problem, the chapter may decide to have all members of a particular committee selected from one class. Chapter officers should not serve as chairpersons of standing committees and thereby deprive other members of an opportunity to develop leadership skills.

Special committees are formed to handle projects not reserved for the executive or standing committees. An ad hoc committee is a temporary committee appointed to accomplish a specific task and then dismissed. Most special committees are of the ad hoc type. Members are usually selected and appointed by the chairpersons who should consider volunteers in making the selections.

Active and useful committee work usually depends on strong leaders serving as chairpersons and members who are motivated to accomplish committee goals. Committees should report their recommendations and accomplishments to the total membership at chapter meetings.

INFORMATION SHEET

STEPS IN PLANNING

Brainstorm to identify concerns and issues related to:

. individual	. job/career
. family	. community
. school	. state
. chapter	. nation

Narrow identified concerns and issues by exploring resources that can help to solve the problem under discussion.

Determine the goals of the project.

Decide what needs to be done and when.

Form a plan for carrying out the activities.

Act on the plan.

Analyze what happened.

INFORMATION SHEET

RESPONSIBILITIES OF EACH COMMITTEE MEMBER

Some of the most burdensome conflicts of this world as well as your chapter could be solved, or eliminated, if groups would exercise group leadership responsibilities through cooperative thinking. You, as a vocational student organization officer, can promote the leadership qualities of each chapter member. Members reponsibilities are to:

1. Participate in group discussion at every opportunity.
2. Take responsibility for the progress of the group toward a workable solution.
3. Follow good thinking habits.
4. Speak loudly enough for all to hear.
5. Be willing for others to disagree with issues you raise.
6. Help others to drop an argument for the sake of moving ahead with "bigger" issues.
7. Be an alert listener while awaiting your turn to participate.
8. Help others to make their point clear and bring valuable experiences that you have had into the discussion.
9. Assume an attitude of conversation in solving group problems.
10. Help the leader by participation that keeps on the subject.
11. Help reduce the "load" of a group leader by forwarding your ideas--be a leader in the group.
12. Become more skillful as a group member--evaluate your contribution to the group.
13. Use parliamentary skills to help the group leader move to successful group action.
14. Be ready to shoulder your share of the group's responsibilities.

INFORMATION SHEET*

COMMITTEE MEETING REPORTS

Date ____________________

Report from ____ Committee

Committee members present: ____

____

Absent: ____

Purpose of meeting: ____

____

____

____

____

Action to be taken: Member(s) responsible:

____

____

____

____

____

Comments: ____

____

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____
Chairperson

---

* Taken from the FFA Advisor's Handbook published by the National FFA Center.

INFORMATION SHEET*

OFFICER APPLICATION

Chapter application for the office of ____________________

Name ____________________ Age ________ Year in Agriculture ___

Degree held at present: (State Degree, Chapter Degree, Greenhand Degree)

Leadership activities in FFA:

Judging team experience:

Leadership and participation in school and other activities:

Are you willing to accept another office? Yes___ No___

If so, which (In order of preference)

Supervised farming and/or agricultural experience program:

Present year program Scope

Program last year Scope

What have you done to improve the FFA?

What do you feel you can do to improve the FFA?

Average grade for current school year: ____________

Average grade in vocational agriculture: (by years) ____, ____, ____

Why are you running for an office of the ________________ Chapter?

Number of meeting attended since last June 1st: ____________

Are you willing to spend extra time on parliamentary procedure? ________

Are you willing to spend extra time in planning and conducting chapter meetings and activities? ____________

- -

Approval of parent or guardian

________________ has our complete approval and our encouragement in his/her quest for a chapter office and we fully realize the additional time and work required of an office of the FFA if he/she is to fulfill his/her responsibilities properly.

____
Parent's or guardian's signature

* Taken from the FFA Advisor's Handbook published by the National FFA Center.

INFORMATION SHEET

WHAT IS LEADERSHIP?

Have you ever asked yourself this question? If so, what did you find for an answer, or who did you think of as an example of leadership.

Thinking about leadership is important because it is an essential aspect of our daily lives. A few people are leaders in everything they do; far too many people are never leaders in anything they do because they fail to learn of their own leadership potential. Before anyone can understand what kind of leader they can be, they must understand what leadership is, and what it is not.

IS IT A TRAIT?

Have you ever thought to yourself "That is the kind of leader I want to be," after meeting a person who was obviously a leader?

This is the Great Man/Great Woman approach to leadership. You simply pick the leader in your life whom you most want to be like, and you study the traits they have, the activities he/she has participated in, talk and act like they do, and have friends like he/she has made and kept. Then, you will be exactly the leader you want to be.

This approach may work for a few people - a very few! The problem that develops in the Great Man/Great Woman approach to leadership is that no two leaders (just like no two people) are exactly alike. A scenario of leadership that worked for one person can just as easily fail for you.

Discouraged students of the Great Man/Great Woman leadership school think that they have no leadership potential. They think leaders are born not made -- discovered not trained. In other words, unless you truly are like the leader you want to be like - don't try to be.

IS IT THE POSITION?

Another school of thought is that leadership is found in the position you hold. Thus, presidents of organizations and chairpersons of committees should always be leaders. But are they?

In business for example, a person is often chosen to head a company or a project because of his/her expertise and experience. That does not always mean that that person is a leader.

For those people (admittedly the majority) who hold positions of leadership and who are, in fact, leaders, which came first: the position or leadership? Think about it. Have you ever voted for a person to be an officer of an organization so that he/she could become a good leader? Maybe, you have -- and maybe that person did become a leader. More often than not, however, the position is achieved by the person holding it because he/she had some leadership potential.

This is not to say that you will not become a better leader by holding a position that exercises your leadership skills. In fact, that is some of the best leadership training you can have.

Like the chicken and the egg, with a position and your leadership, it is difficult to know which can or must come first.

IS IT STYLE?

Some people think that anyone can be a leader who acts like a leader. This is the style approach to leadership. The secret to this approach is matching your style to that of the group you want to lead. If you have a group made up of members who don't care who leads as long as they don't have to - you can be an Autocratic Leader. Autocrats make all of the decisions, do most of the work and get all of the complaints and congratulations (if there are any). If you have a group of interested and involved people who want to have a part in the decision making process, you need to be a Democratic Leader. Democratic Leaders keep their group on course, keep members working together, and help the group lead itself.

If you have a group that is extremely well organized into sub-groups which make all of the decisions and do all of the work - you can be a Laissez-faire Leader. Laissez-faire does not mean lazy, but merely "laid back" or casual in the approach to leadership. Actually, a Laissez-faire Leader may do well in various types of groups or positions - if that is the popular style of leadership.

As these styles and hypothetical groups suggest, the type of style depends upon what is needed or wanted from those who chose a leader. Sometimes the basis of that decision is not just style, but the skills that accompany it.

IS IT SKILL?

Students of leadership who don't have success in the Trait, Position or Style approaches may find leadership in the Skill approach. This approach assumes that leadership is learned set of skills which anyone with certain minimum requirements can acquire. In short, by acquiring leadership skills you can be a leader regardless of your traits, your position, or your style.

Once you have a skill (or several of them) you are qualified for leadership in any group with a task to utilize that skill. Like fitting pieces of a puzzle into place, you can perform certain functions for certain groups and in certain positions that match your leadership skills. This assumes, of course, that you are willing to improve the skills you have and expand upon the number of them.

To begin with, you need to identify the leadership skills, or potential skills, you have. Ask a friend who knows you well and who has worked with you on several projects or in several organizations what skill he/she thinks you have. Do you persuade people to your point of view? Do you motivate others to work harder? Are you well-organized? Are you an effective communicator in speech and writing? These are questions that require objective and honest answers from you and the people you work with.

The next step is for you to decide what leadership skills are important. This is something like the Trait approach in that there are many common skills that effective leaders possess. Not yet an expert in leadership, you may not be able to adequately decide what skills are important. To do so requires study and practice.

Studying leadership skills can be done by reading, attending leadership training activities, and keeping track of your own impressions of what skill is needed in a particular task or position of leadership.

Practice is gained by using the skills you have in an effort to improve them. Participating in speech contests or committee work, running for a position that you think will utilize your skills, and asking yourself why you won or lost in each attempt is the most valuable practice you can have.

Although there has never been a fully-skilled leader or a complete list of leadership skills, here is an suggested list for your reference:

1. Ability to organize
2. Ability to communicate (speaking & writing)
3. Ability to motivate others
4. Ability to manage time effectively
5. Ability to see the group's true objective
6. Ability to stay informed
7. Willingness to listen
8. Willingness to delegate authority (when appropriate)

Let's consider each of these leadership skills and think about how they can be developed and used.

1. Ability to Organize

If you have ever wondered what you should do next, where the notes from your last committee meeting were, or who you asked to help you with a certain project, perhaps you know what it is to be a little un-organized.

There is no set formula for "how to organize." It is more important how you approach each individual project or activity. If you spend a little time after each activity summarizing in your mind--or briefly on paper--what happened and what needs to be done next, you have taken the first step. Next, you should attempt to put all of your commitments into perspective. Which of the "needs to be done" has top priority?

Efficiency is another element of organization. It is not enough that you know what is most important to do, but that you do it with the least confusion and complication possible.

2. Ability to Communicate

No leadership skill receives as much practice as communication. Yet, most people have significant room for improvement in the effectiveness of their communicative skills--speaking and writing.

The old adage that communication is a two-way process is very true. Effective speakers and writers are usually also good readers and listeners. The more time and effort devoted to the thoughts of others the better able you will be to commuicate your own thoughts.

Public speaking is sometimes thought to be an exception to the two-way communication process merely because there is little verbal response from audiences. It is important to remember that public speakers spend only a fraction of their time at the podium, relying on the same interaction as anyone else the rest of the time to keep their speeches current and effective.

Writing skills can also be improved with a little practice. In writing, there is the advantage of being able to see your thoughts and words before anyone else does--unlike speaking where a slip of the tongue is heard by all. To make the most of this quality of writing, you should prepare several drafts of what you are trying to write and then adopt the one that says it most effectively. Obviously, time does not always permit you to make this effort. When it does, however, the practice will be more valuable than our usual method of practicing communication, such as talking to a friend.

3. Ability to Motivate Others

Countless books have been written on this leadership skill. Many of them are worth reading and a good librarian or bookstore should be able to provide you with them, if you are interested.

What many of these books have in common is the subject of attitude and its effect upon your ability to motivate others.

Think for a moment about an occasion when you were able to get people excited about joining in some activity--and then think of an occasion when that excitement of your followers seemed to be lacking. What was your attitude on each occasion? Were you exhibiting the attitude that the others showed?

Depending on the personalities involved, motivation can be seemingly easy or nearly impossible. Like other skills, it requires practice and a positive attitude.

4. Ability to Manage Time Effectively:

Effective leadership is synonymous with getting things done. To get things done requires the efficient use of one of life's most precious commodities - TIME.

Time management experts advocate the use of lists and prioritizing to get control of your time. They suggest starting off each day with a list of the things that you want to accomplish that day, with each item being coded with an "A," "B" or "C" priority. If items arise in the course of the day that you did not anticipate on your list, you cut "C" priorities first. Always try to get your "A" priority items done each day.

In reality, few people can follow such a list each day. The logical approach to time management can be used in the less-formal mental lists and priorities that we can keep.

5. Ability to See the Group's Objective

What are your goals? What are your objectives? Where is your group headed? These are common questions for leaders to ask. The real test of leadership is finding some answers.

In the case of a group, it often happens that short-term accomplishments distort the view of long-term objectives. For example, it is easy to sponsor three separate and successful fund raising activities and still fall short of the total budget objective. No one is more responsible for keeping an eye on the objectives of a group than its leader.

The same skill is important in personal leadership as well. If your objective is the American Farmer Degree, you can't ignore essential efforts to obtain your Chapter Farmer and State FFA degrees.

6. Ability to Stay Informed

An important ingredient to leadership is knowledge. This does not mean that only the brilliant can lead, however.

The most useful kind of knowledge for the purpose of leadership is that obtained in the kind of two-way communication discussed above. By good listening, reading and thinking required for effective communications, a leader can also stay well informed.

We live in an age of virtual information overload. This means that there is literally more information than any one person can assimilate effectively on most subjects. In order to be well-informed, then, a leader must be selective about the information he/she seeks.

As a student, you should be able to appreciate the selective learning process. Just be aware that in leadership positions that same skill will be required. You will not be graduated from the necessity to be informed as long as you are a leader.

7. Willingness to Listen

As already discussed in regard to effective communication, listening is definitely a leadership skill.

Aside from the communicative and informational benefits, listening has advantages for the people who are listened to. By your willingness to listen, they have a part in your leadership decisions. This will not always be a positive impact, to be sure. Nonetheless, the input gained from listening can make leadership a more democratic process, and usually a more informed process, as well.

Since persuasion is oftentimes the task of a leader, you should also realize that listening can give added efficiency to your persuasive ability. Quite simply, the more you listen, the less you may have to say.

8. Willingness to Delegate Authority

As noted under the discussion of Leadership Styles, there are Autocratic Leaders and there are Democratic Leaders, with many varieties in between. One of the characteristics that distinguishes these styles is the willingness to delegate authority.

Depending on the leadership position you hold, there may be real advantages to delegating some of your authority. Chairpersons of committees, for example, can delegate most of the real work of the committee and thereby spend more time on the coordination of that work and the planning for future projects.

There are times when delegation is not appropriate, of course. If you are elected chapter president, you should not delegate all of your responsibilities to the greenhands of the chapter, for instance.

Realizing when and to what extent to delegate authority is one of the marks of a person who is well-trained in this particular leadership skill.

LEADERSHIP AND THE FFA

As an FFA member, it may already have occurred to you that few organizations talk about, meet about, or have as much to do about leadership as FFA. From the National FFA Convention to the Greenhand Degree - all of the FFA's leadership development programs and activities are provided to help you develop your leadership skills.

INFORMATION SHEET

STEP-BY-STEP PROCEDURE FOR PRESIDENT TO FOLLOW

1. Stand and tap the gavel two times.

2. Read the President's part in the Opening Ceremonies. (Refer to official FFA Manual) Complete Opening Ceremony.

3. Ask: "Will the Secretary please read the minutes of our last meeting?"

4. After the Secretary reads the minutes, say: "Thank you. Are there any additions or corrections? (Pause) Seeing none they stand approved as read." (Tap gavel once.)

5. State: "We will now have officer reports. Does any officer have a report to make at this time?" (Treasurer will rise and seek recognition. You recognize Treasurer by calling her/his name.)

6. Following Treasurer's report you ask: "Are there other officers who wish to report at this time? (Pause) If not, the chair will now receive reports from any program of activity committees." (Chairperson of the Conduct of Meetings Committee will seek recognition. Recognize student by calling her/his name.)

7. Following the report, say: "Thank you. Do we have other program of activity reports? (Pause) If not, we will now have a volunteer recite the Creed as a special feature of this meeting. Do we have a volunteer?" (Recognize student who stands by calling her/his name.)

8. Following the presentation, say: "Thank you. (Pause) Do we have any unfinished business which should be discussed at this time?" (Pause) Seeing none, we will proceed to special committee reports. "Do we have any special committees who would like to give a report of their activities?" (Recognize Chairperson of the Food for America Committee by calling her/his name.)

9. Following report, say: "Thank you. I'm sure our chapter will gain much from this activity. (Pause) Are there other reports? (Pause) If not, the floor is now open for any new business which should be discussed." (Recognize student who rises. The students will voice a concern and will move that the chapter pay for the room for our chapter representatives at the National Convention.)

10. You ask: "Do I hear a second to the motion?" (Pause) "The motion to pay our chapter representatives' rooms at the National Convention has been properly moved and seconded. Is there any discussion? (Pause) If not, all those in favor of the motion, raise your right hand. (Pause while you count hands) Opposed, same sign. (Count hands - then announce vote.) The motion passes (or fails)." (Tap gavel once.)

11. Read the President's part in the closing ceremonies. (Page 47 and 48 in the Student Handbook.) Complete closing ceremony.

INFORMATION SHEET

SUGGESTED MEETING PROCEDURES FOR CHAPTER MEMBERS

Secretary: When the President calls for the minutes, stand up and read the following:

Minutes of a regular meeting of the ________________ FFA Chapter ____________________, Illinois. September 10, 19__. The meeting was called to order at 8:00 p.m. by the president, ______________________. Thirty-four members were present. The minutes of the previous meeting were read and approved. The treasurer reported:

Balance on hand August 10, 19__	$300
Total receipts - dues received.	50
Disbursement - FFA manuals	30
Balance on hand, September 10, 19__	$320

Leo Martin, chairperson of the recreation committee reported that a hay ride had been planned for the next meeting. A film on gun safety was shown. Keith Smith reported that the refreshment stand discussed last meeting will be built near the football field. John Towns reported that the flowers were sent to Mrs. Olsen in the hospital. He also added that she should be out of the hospital by next week. Susan Anthony moved to purchase a pick-up truck for chapter use. Tom Jones seconded the motion. After much discussion, the motion was voted down. The meeting was adjourned at 9:00 p.m. After the meeting, members played volleyball.

Treasurer's Report: When the President asks for officer reports stand and say: Mr/Madam President. (Pause)

- Balance on hand September 10, 19__	$320
- Total receipts - 20 dues	100
- Disbursements	20
- Balance on hand, October__, 19__	$400

Special Feature Volunteer: After the President asks for a volunteer to present Creed - rise and recite or read the FFA Creed.

New Business Item: When the president says "The floor is now open for any new business which should be discussed," stand and say "Mr/Madam President" (Pause). Then say, "I am worried about the costs to our members going to the National FFA Convention in Kansas City next month; therefore, I move that our chapter pay for the motel rooms for our chapter representatives at the National Convention." Then sit down.

Conduct of Meetings Chairperson: When the President asks for program of activity reports say:

"Mr/Madam President. (Pause) The Conduct of Meetings Committee met and has arranged for Dr. Baker, an area veterinarian, to present a program for our next meeting. He will be discussing animal health practices which should be beneficial to member with livestock."

Food for America Chairperson: When the President calls for any Special reports, rise and after President recognizes you say:

"The Food for America project will begin next Monday. If you have not signed up for the project and would like to, see me after the meeting."

Persons to second motion: After a motion has been made, the President will ask for a second. You say: "Mr/Madam President, I second the motion."

STUDENT WORKSHEET

COMMITTEES

I. Match the committee with the purpose.

Committee

___ 1. Supervised Ag. Occupational Experience

___ 2. Cooperation

___ 3. Community Service

___ 4. Leadership

___ 5. Earning, Savings, & Investments

___ 6. Conduct of Meetings

___ 7. Scholarship

___ 8. Recreation

___ 9. Public Relations

___ 10. State & National Activities

___ 11. Alumni Relations

Purpose

A. Helps chapter publicize activities.

B. Encourages members to have fun.

C. Helps members work with FFA supporters.

D. Actions benefit community.

E. Helps members with their S.O.E. programs.

F. Encourages members to apply for FFA Awards.

G. Arranges for special meetings.

H. Works with other organizations.

I. Helps chapter secure funds.

J. Encourages members to improve grades.

K. Provides opportunities to practice leadership.

II. Circle the numbers of the standing committees listed above that our chapter has.

III. List any additional committees our chapter has.

1.
2.

3.

IV.

STUDENT WORKSHEET

IDENTIFY THE LEADER

Directions: Draw a line from the famous quotation on the left to its occurrence in history on the right.

"Four score and seven years ago..."

"Give me liberty or give me death!"

"Ask not what your country can do for you, ask what you can do for your country!"

"One small step for man, one giant leap for Mankind"

"You have nothing to fear but fear itself"

"I have a dream. . . . . ."

Martin Luther King used this phrase to promote civil rights.

This quotation of Patrick Henry became a slogan of Americans determination to win their independence from England.

President Franklin Roosevelt spoke to the American citizens during his inaugural address to instill confidence to endure the Great Depression.

During his inaugural address, John F. Kennedy set the tone for the 1960's--The New Frontier.

After landing on the moon, Neil Armstrong summed up the feeling of achievement for all those connected with the space project.

This Civil War speech of Abraham Lincoln boosted the morale of the Union troops and became a symbol of the war.

Can you think of any other quotations where WORDS became an important part of history?

Quotation	Event
______________________________	______________________________
______________________________	______________________________

WORDS ARE POWERFUL--LEADERS SHOULD DEVELOP THE ABILITY TO EFFECTIVELY USE THEM!!

TEACHER'S KEY

STUDENT WORKSHEET

COMMITTEES

I. Match the committee with the purpose.

Committee

E 1. Supervised Ag. Occupational Experience

H 2. Cooperation

D 3. Community Service

K 4. Leadership

I 5. Earning, Savings, & Investments

G 6. Conduct of Meetings

J 7. Scholarship

B 8. Recreation

A 9. Public Relations

F 10. State & National Activities

C 11. Alumni Relations

Purpose

A. Helps chapter publicize activities.

B. Encourages members to have fun.

C. Helps members work with FFA supporters.

D. Actions benefit community.

E. Help members with their S.O.E. programs.

F. Encourages members to apply for FFA Awards

G. Arranges for special meetings.

H. Works with other organizations.

I. Helps chapter secure funds.

J. Encourages members to improve grades.

K. Provides opportunities to practice leadership.

II. Circle the numbers of the standing committees listed above that our chapter has.

III. List any additional committees our chapter has.

1.

2.

3.

IV.

FFA Greenhand Degree

1. Awarded by local chapter
as the first level of membership

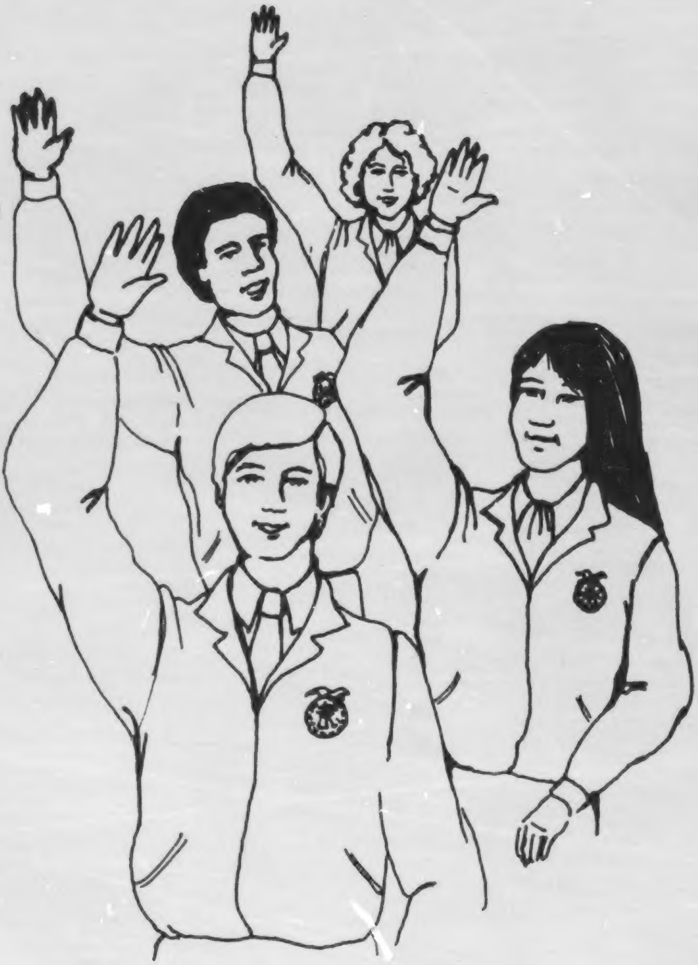
2. Qualifications for the Greenhand Degree

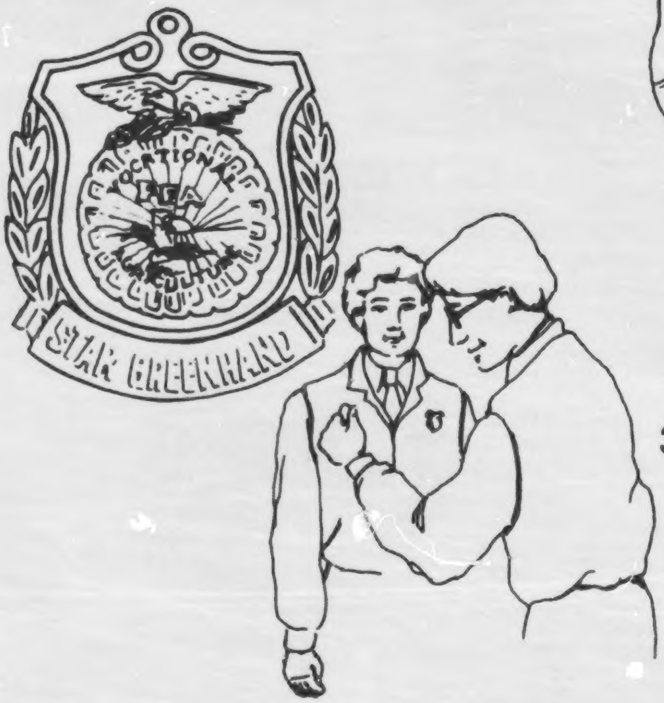
Be enrolled in
Vocational Agriculture

Be familiar with the aims, purposes, and history of the FFA

Be able to explain the FFA Creed

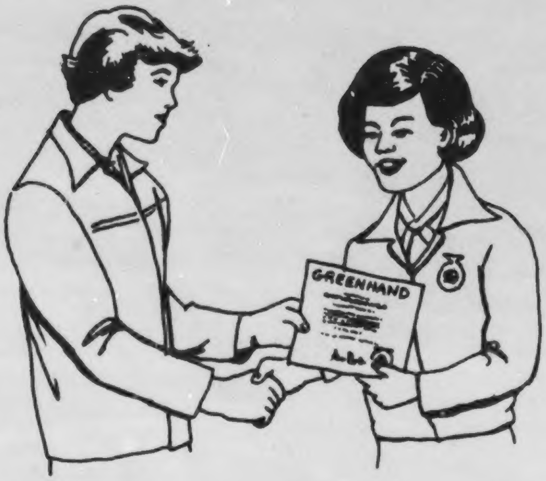
Receive a majority vote
from the
local chapter members




STAR GREENHAND

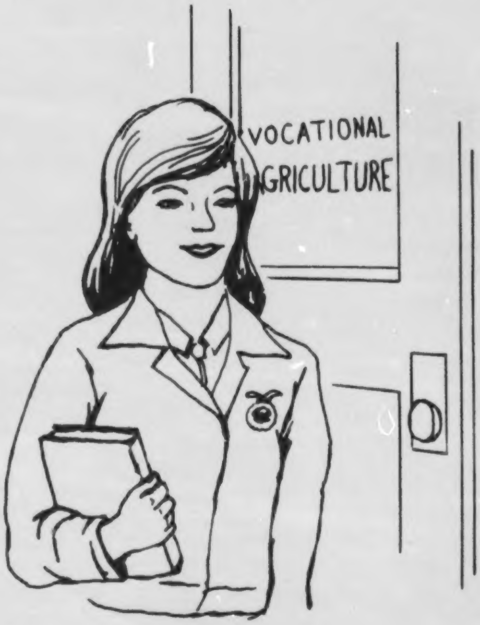
3. Start planning now
for an active year.

Requirements for Chapter FFA Degree

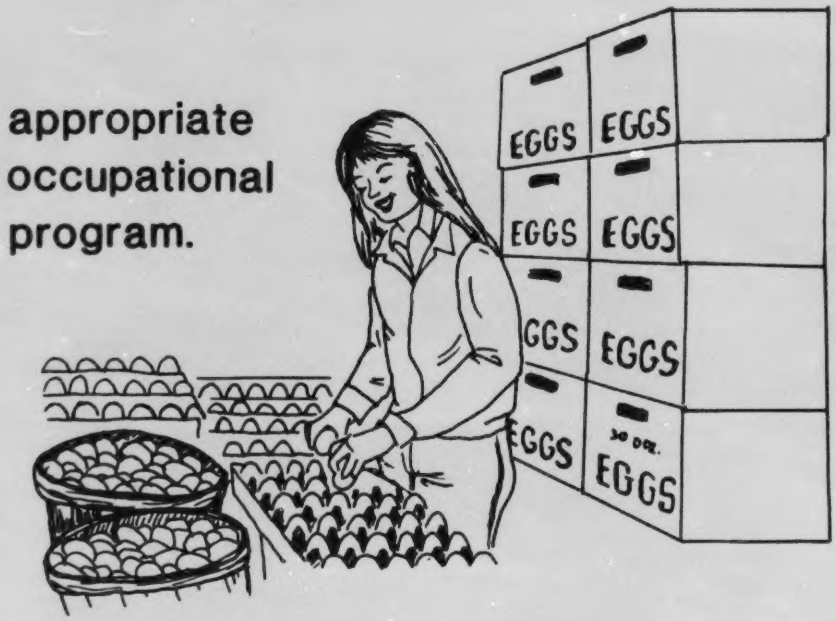


1. Must have received The Greenhand Degree.

2. Successfully completed at least one semester of vocational agriculture.


VOCATIONAL
AGRICULTURE

3. Have an appropriate supervised occupational experience program.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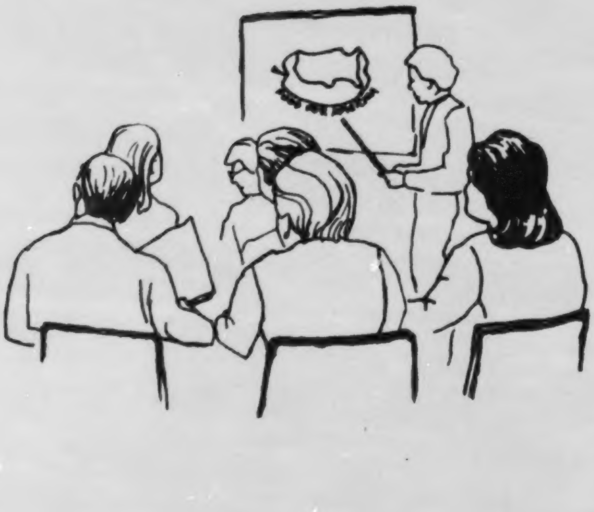
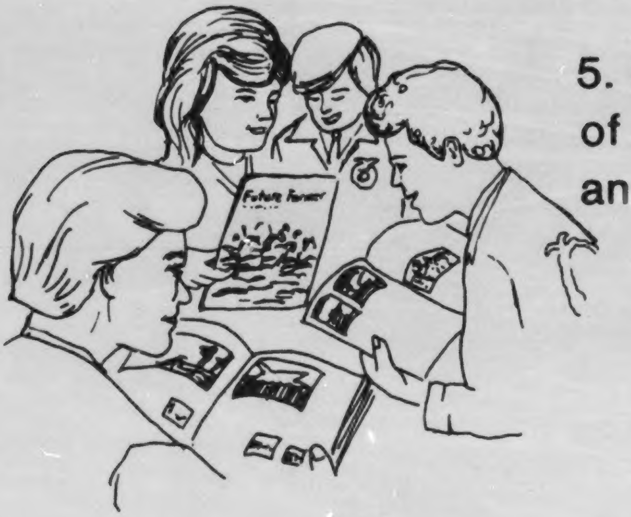
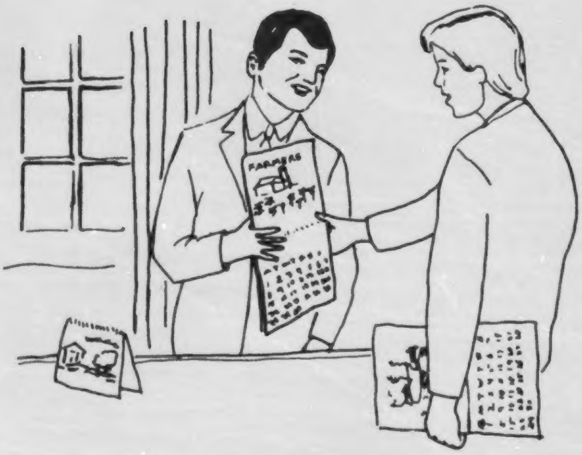


4. Be currently enrolled in a vocational agriculture course.

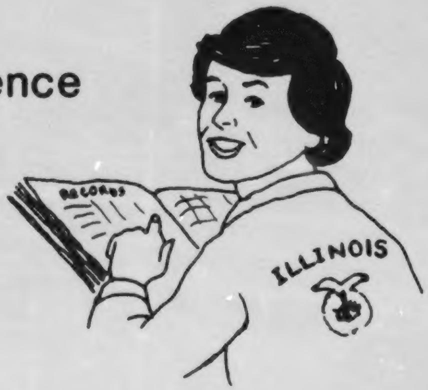

Future Farmer

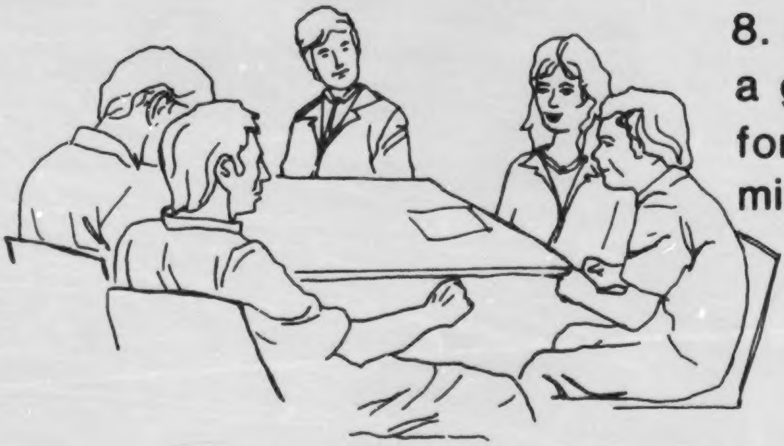
5. Have an understanding of the local constitution and program of activities.

6. Have participated in at least three local FFA activities.



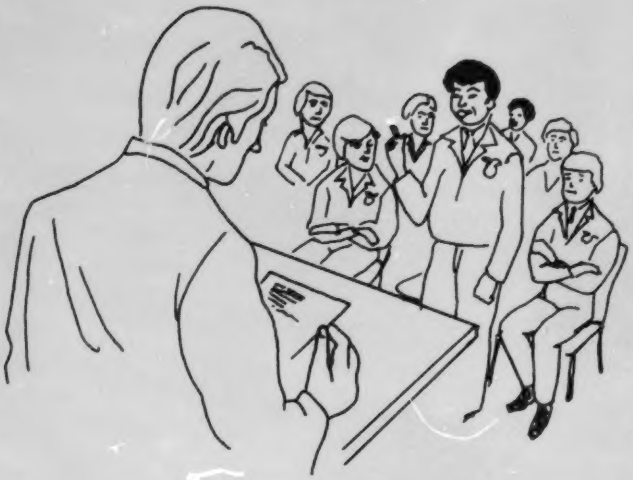
7. Have earned $50 from your supervised occupational experience program or worked a minimum of 50 hours as shown in your SOEP record book.



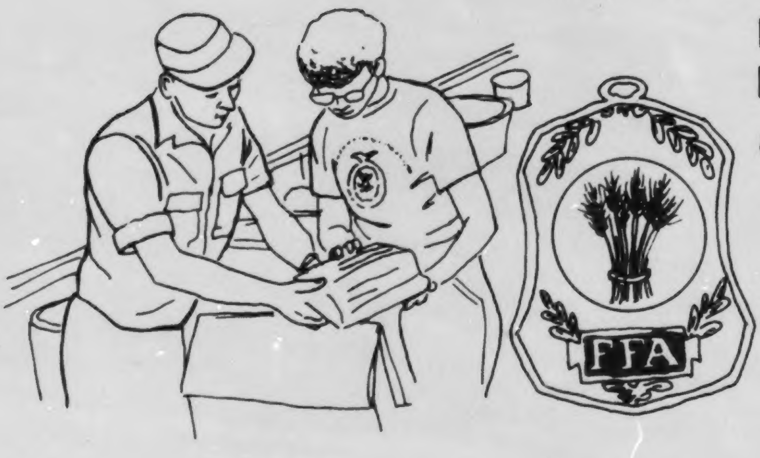


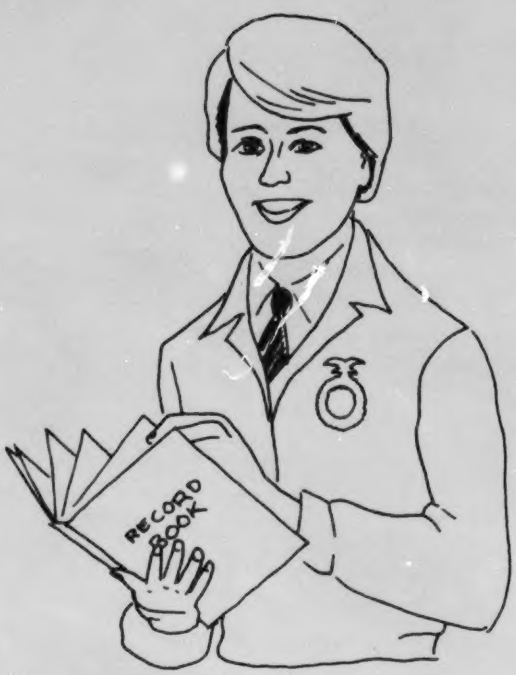
8. Be able to lead a group discussion for at least 15 minutes.

9. Demonstrate a knowledge and ability to use at least 5 parliamentary procedure skills.



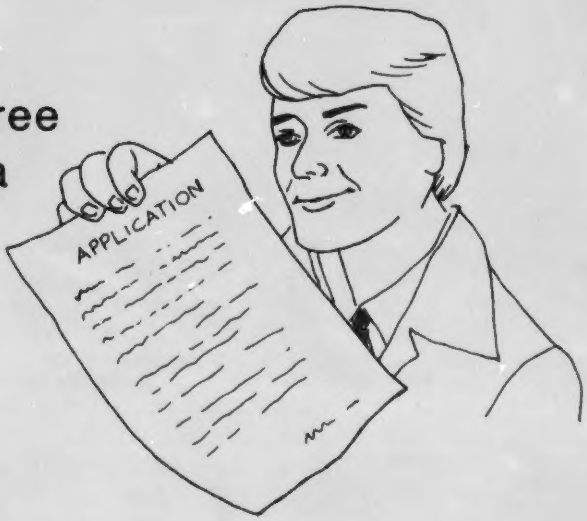
10. Have made acceptable progress toward a Proficiency Award at the local level.




RECORD BOOK

11. Must currently have a passing grade in agriculture.

12. Make an application for the Chapter FFA Degree and receive approval of a majority of the chapter members.


APPLICATION

STATE FFA DEGREE REQUIREMENTS

1. Have the Chapter Farmer (FFA) Degree and have been an active member for at least two years.
2. Completed two years of vocational agriculture.
3. Have earned and productively invested at least $750 from your S.O.E.P. or worked 750 hours in a laboratory experience program.
4. Demonstrate the leadership ability by the following:
    a. Perform 10 parliamentary procedure skills.
    b. Give a five minute speech.
    c. Serve as an officer, commitee chairperson, or member of a major FFA commitee.
5. Have a satisfactory scholastic record.
6. Participate in the planning and completion of chapter program of activities.
7. Participate in five FFA activities above the chapter level.
8. Meet other requirements identified by your advisor.

AMERICAN FARMER DEGREE REQUIREMENTS

1. Have the State FFA Degree and have been active for at least three years.
2. Must be at least one year out of high school and have an outstanding S.O.E.P.
3. Must have earned and invested at least $5000 in an S.O.E.P.
4. Must document participation in leadership activities from local to state levels and have a satisfactory high school record.
5. Illinois nominates American Farmer and Agribusiness Degree candidates each year.

STATE FFA CONVENTION

WHAT?

WHEN?

WHERE?

WHO ATTENDS?

WHAT HAPPENS?

WHAT DELEGATES SHOULD DO WHEN THEY RETURN HOME.

NATIONAL FFA CONVENTION

WHAT?

WHEN?

WHERE?

WHO ATTENDS?

WHAT HAPPENS?

ILLINOIS FFA LEADERSHIP CAMP

1. Started in 1975 by the FFA Alumni Association
2. Held each July or August for one week.
3. Chapter officers from every FFA Chapter are eligible.
4. Leadership staff includes:
    - Past state & national FFA officers
    - Current state & sectional officers
    - A Farmland Industries Leadership Intern
5. Program of events includes:
    - Group workshops on FFA programs and activities
    - Group projects
    - Professional speakers and entertainments
    - A camp banquet
    - Recreation time each day

LEADERSHIP TRAINING SCHOOLS

WHEN?	Held anually in the fall.
WHERE?	In each section.
WHO ATTENDS?	Chapter Officers, Greenhands, Section Officers and Advisors.

WHAT ARE THE PURPOSES?

- to provide officer training
- to conduct a section business meeting
- to meet and learn from fellow business officers
- to meet the State FFA Officers

FFA CHAPTER BANQUET

1. WHEN IS IT HELD?

2. WHERE IS IT HELD?

3. WHO ATTENDS?

4. WHAT IS THE PROGRAM?

5. WHO IS RECOGNIZED?

6. HOW TO ORGANIZE?

7. WHEN TO ORGANIZE?

8. IS IT WORTH IT?

FFA COMMITTEE WORK

HUMOROUS DEFINITION:

A committee has been called a group of the unprepared, appointed by the unwilling to do the unnecessary.

Do you agree?

IMPORTANT COMMITTEE INFORMATION:

1. When to have a committee
2. Who serves on a committee?
3. Who leads a committee?
4. Who appoints committees?
5. How should a committee work?
6. When is a committee not working?

TRANSPARENCY DISCUSSION GUIDE - FFA DEGREE REQUIREMENTS

Transparencies on FFA Greenhand Degree

1. Explain each of the requirements on the transparencies.
2. Be honest with students on how strict you are in use of these requirements for giving the degree in your chapter.
3. If you have other requirements for the Greenhand Degree, explain them.

Transparencies on Requirements for Chapter FFA Degree

1. Again, answer any and all questions about the official requirements.
2. Discuss other particular requirements you have for this degree.
3. Note the degree title and how it can be adapted for non-farm students.

Transparency on State FFA Degree Requirements

1. Give details of how you choose the chapter's candidates for the State FFA degree -
    - a local committee
    - record book quality
    - seniority
    - other
2. Explain which of the Illinois FFA's academic requirements specifically apply to your school.
3. Explain how State FFA Degree candidates are interviewed and ranked.
4. Answer questions on other official requirements.

Transparency on American Farmer Degree Requirements

1. Explain the usual procedure for assisting American Farmer Degree candidates with records and project development beyond high school.
2. Impress upon the members the benefits of starting work toward the American Farmer Degree early (Sophomore or Junior year of high school).

Transparency on State FFA Convention

1. Go through the "What, When, Where, and Who Attends" information. Add any thoughts that you have on the convention's location, or reasons for the time of the convention.

WHAT: Illinois FFA Convention

WHEN: Second Week of June each year

WHERE: Assembly Hall, University of Illinois at Champaign-Urbana

WHO ATTENDS: FFA Members, Parents, Advisors, Alumni, and Guests

Average attendance is 2000 - 3000

2. WHAT HAPPENS:

   a. Chapter Award Winners are recognized.
   b. State FFA and Honorary FFA degrees are conferred.
   c. Foundation Proficiency Awards are presented.
   d. State Association Business is conducted.
   e. State FFA Chorus and Band perform.
   f. Professional speakers and entertainers perform.
   g. State FFA officers give retiring addresses.
   h. New State FFA Officers are elected.

3. DISCUSS OR EXPLAIN THE FOLLOWING:

   a. Offer some sample programs from past conventions to the class.

   b. Mention the Chapter Awards presented:

      - Heritage - Cooperative Activities - Chapter Safety -Bankers Plaque for Program of Activities

      Tell which of these awards your chapter has been in competition for in the recent past.

   c. Go into some detail on the Foundation Proficiency Awards presentation--describe the use of slides and taped narration to introduce each award winner and the award category.

   d. Describe the Public Speaking Contests--Extemporaneous and Prepared. Tell how the three finalists have come to be chosen.

   e. Talk about the format at the section business meetings. Encourage interested members to consider running for sectional offices.

   f. Gives information of the State FFA Band and Chorus. Encourage members with a musical ability to apply.

   g. Answer questions on the election of the State FFA Officers:

      - Current Section Presidents and the usual candidates for the four offices of President, Vice-President, Secretary - Treasurer, and Reporter.

- A candidate can drop down to lower offices.
- Several ballots are required to elect an officer.
- Only the 600 or so official delegates can vote to elect the officers.

4. WHAT SHOULD A CHAPTER DELEGATE DO WHEN HE/SHE RETURNS FROM THE CONVENTION?

   a. Give a summary of the convention program
   b. Report the business and election results from the Section meeting.
   c. Give impressions of the Chapter Exhibits, U. of I. campus, etc.
   d. Explain the procedure and results of the State FFA Officer Elections
   e. Answer members questions as they look over a past convention programs.
   f. Advise chapter members on ways to improve the local chapter.

Transparency on National FFA Convention

a. WHAT: National FFA Convention

b. WHEN: Second Week in November - Held annually

c. WHERE: Municipal Auditorium, - Kansas City, Missouri

d. WHO ATTENDS: FFA Members, Advisors, Parents, Alumni, and Guests
Usual attendance is around 20,000.

e. WHAT HAPPENS:
- All of the traditional activities of a State FFA Convention.
- Presentation of National Chapter Awards, Proficiency Awards, and the American Farmer Degrees.
- Committee Work and Convention Business by the Official State Delegations. (Illinois has three delegates)
- Speeches from honored guests, sports figures, and national political leaders.
- National FFA Chorus and Band perform.
- National FFA Officers give retiring addresses.

- The American Royal Livestock Show is going on concurrently.
- The Agricultural Career Show is held in the Convention Center.

Transparency on Illinois FFA Leadership Camp

1. While going through the transparency outline, identify the members from your chapter who have attended an Illinois FFA Leadership Camp. When did they attend?
2. If possible, get one of these members who has attended the camp to speak about his or her experience.
3. Encourage members to consider attending and to ask questions of the camp directors who are usually at the FFA Convention in June.
4. If a member shows an interest, help him or her to contact the State FFA Office for more details.

Transparency on Leadership Training Schools

1. Tell members the approximate time the event is held in your section each year.
2. If the L.T.S. is held at the home school of the Section President, explain that tradition and the fact that it is one of the Section President's responsibilities to organize this event.
3. If you have had a Section President from your chapter or hosted an L.T.S., tell of that event.
4. Do your chapter's officers attend the Section L.T.S. each year? If so, have a past or current officer tell the class about a typical officer session.
5. If the advisors hold a meeting at the L.T.S., explain the importance of this to the class, as well.

Transparency on FFA Chapter Banquet

1. Tell the class the usual date of your chapter's banquet (e.g., 1st or 2nd week of March)
2. If your chapter holds its banquet (or have held it) somewhere other than the high school mention this, and give any interesting reasons for the location.
3. Give the members a rundown of the usual people who attend other than members and their parents
   Do you recognize local foundation contributors and community members who give support to your chapter?

Do you invite the school principal and superintendent, board of education members, and other faculty?

4. Do you try to have an FFA officer speak at your banquet? Tell of some other interesting programs that you have had.
   Do you ever have local talent for entertainment? If so, give details.

5. Detail the award winners, judging teams, and individual accomplishments that you try to recognize at your annual banquet.
   Do you give out Foundation Contribution certificates at the banquet - or recognize these supporters?
   How do you recognize State FFA Degree and American Farmer Degree winners?

6. Tell how you usually structure banquet organization - by committee - the chapter officers - or yourself as advisor.

7. If a member wants to volunteer for a banquet committee in the future - give an idea of when most of the planning and work takes place.

8. Ask the members if they can cite reasons that a banquet should be held each year.
   Get them to recognize the functions of a banquet: thanking the community, recognizing award winners, motivating future work.

Transparency on FFA Committee Work

1. Humorous definition

   Ask if the members understand the implication of the old definition of a committee

2. When to have a committee?

   Mention some of the more important committees in your chapter (Banquet, BOAC, Heritage, etc.)

   Think of other aspects of your program of activities that could use a committee in planning or instituting.

3. Who serves on committees?

   Dispel the misconception that only good students or people with a particular talent serve on committees.

   Encourage younger members to volunteer for a committee, the next time one is chosen at a chapter meeting.

4. Who leads a committee?

The chairperson: He or she has the responsibility of keeping a committee on course and working. A good chairperson seeks to get all members' input and give everyone some responsibility.

The members: A good committee is only as good as the members on it. All should seek to help the chairperson define the committee's task and move toward its accomplishment.

5. Who appoints a committee?

Usually the chapter president, often with the advisor's input or that of other chapter officers.

Explain to a younger member that if he or she has an interest in a particular committee or activity that doesn't have a committee, they should let you know.

Initiative is the most valuable resource for any committee member.

6. How should a committee work?

Point out to the members that a "good committee" works. Many people have tried to define what a good committee is, but it usually depends upon the job it has to do.

Examples: A chapter banquet committee should start early in the school year, so planning isn't left until a week before the event.

A B.O.A.C. committee should have input from community leaders on what a good project for the chapter would be. The point is, this committee can't make its decision alone without input.

7. When is a committee not working?

For the benefit of committee members who should be watching for signals that the committee isn't working as it should, have the class think of creative signs of "a committee in trouble."

After the brainstorming, give the class some of the following trouble signs or ones you have experienced in working with committees.

Trouble signs:

When the chairperson doesn't know who the members of the committee are.

When the chairperson doesn't know what is being done on any of the major tasks of the committee.

When the committee has never had a meeting.

When two different members of a committee come to the chapter advisor at different times and have completely opposite views of what the committee decided to do on a project.

Remind the members that this isn't comical--but a serious indication of committees gone astray.

TEACHER'S KEY

SAMPLE TEST QUESTIONS

DEVELOPING CITIZENSHIP SKILLS

I. Completion Section

1. Four degrees which students can earn in the FFA are Greenhand, Chapter, State FFA, and American.

2. Three types of FFA committees are Executive, Standing, and Special (ad hoc).

3. After returning home from the State Convention, chapter delegates should report to the chapter members.

4. The Illinois FFA Convention is held at Champaign, Illinois in the month of June.

5. The National FFA Convention is held at Kansas City, Missouri in the month of November.

6. State officers elected at the state convention are president, vice-president, reporter, and secretary-treasurer.

II. True-False Section

T 1. The eleven standing committees of the FFA correspond to the major sections of a program of activities.

T 2. FFA committees should usually report their recommendations and accomplishments to the total membership.

F 3. A laissez-faire leader is one who does all the work.

F 4. Autocratic leaders usually depend on the membership to make decisions.

T 5. Each year, 2% of the FFA membership in Illinois may be elected to the State FFA degree.

F 6. All FFA members present at the Illinois FFA Convention can vote in the state officer election.

F 7. Committees are usually appointed by the FFA advisor.

T 8. The FFA Leadership Camp is designed to help chapter members attain leadership skills.

F 9. The State Secretary-Treasurer is responsible for the publication of "Your Illinois FFA," the state magazine.

F 10. "Leaders are born, not made."

III. Essay Questions

1. Six important leadership skills are -
   a. Ability to organize
   b. Ability to communicate
   c. Ability to motivate others
   d. Ability to manage time
   e. Ability to see group's objective
   f. Ability to stay informed
   g. Willingness to listen
   h. Willingness to delegate or assign responsibility

2. What are the purposes of an FFA Banquet?
   a. Recognize award winners
   b. Thank the community
   c. Motivate members
   d. Provide members with leadership training
   e. Inform public about FFA program

3. What are some signs that a committee is not functioning?
   a. Chairperson doesn't know who members are
   b. Committee has not met
   c. Committee has not reported to the advisor or members
   d. Committee members disagree on purposes of the committee

UNIT C: Supervised Occupational Experience

PROBLEM AREAS:

1. Summarizing and analyzing records
2. Estimating income and expenses for crop and livestock projects

UNIT C: SUPERVISED OCCUPATIONAL EXPERIENCE

PROBLEM AREA: SUMMARIZING AND ANALYZING RECORDS

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with sophomore or second-year agriculture students who have completed or are about to complete a livestock or crop project. Students who have not conducted a project during their first year in agricultural occupations can benefit from instruction in this area but they will probably not have an opportunity to apply what they learn about record keeping to their S.O.E.P. until a later date. The problem area is built around the use of the Illinois record book "Records of my Supervised Experience Program" available from The Interstate Printers and Publishers and the Tom Farmer Practice Problem available from Vocational Agriculture Service, University of Illinois. The assumption has been made that students have worked the Tom Farmer Problem and made all the entries in a practice record book. Now, to move into this problem area, students should be ready to summarize and analyze Tom Farmer's project.

The recommended time for teaching this problem area is January right after Christmas vacation and before SOE project records are closed out. About three days of instructional time should be allocated if students do not have their own record books to close out. If they do have one or more production project books to summarize a full week of instructional time should be scheduled. Some teachers may prefer to teach this problem area to freshmen who have worked the Tom Farmer problem rather than split the exercise into two parts. Advantages can be cited for both approaches so the teacher should use the system that works best with his or her class.

This problem area does not include any materials for teaching students how to keep records in the Illinois Supervised Employment Experience Record Book which is used by students enrolled in cooperative education programs. The project staff has recommended that instruction in this area be scheduled in Core III or during the junior year.

CREDIT SOURCES:

These materials were developed through a funding agreement, R-33-32-D-0542-388, with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education, Research and Development Unit, 100 N. First Street, Springfield, Illinois 62777. Opinions expressed herein do not reflect, nor should they be construed as policy or opinion of the State Board or its staff.

The materials included in this problem area were prepared by Paul Hemp, Project Co-director and reviewed for technical accuracy by John Herbst, Vocational Agriculture Service. The materials have been field tested by fifteen Illinois field-test teachers.

TEACHER'S GUIDE

I. Unit: Supervised occupational experience

II. Problem area: Summarizing and analyzing records

III. Objectives: At the end of this problem area the students will be able to:

1. Summarize a record book.
2. Analyze records.
3. Use efficiency factors to identify the strong and weak parts of a productive enterprise.
4. Calculate (a) management earnings (b) labor and management earnings, and (c) labor, capital and management earnings.

IV. Suggested interest approaches:

1. Review with the class the important reasons for keeping records. Ask class which reasons will not apply if records are not summarized and analyzed.
2. Give class a brief overview of what is to be covered in this problem area. Explain how this instruction will help them to summarize and analyze their own S.O.E. records.
3. Ask class to identify reasons for summarizing and analyzing records. Ask the question, "Why is it important that we summarize records correctly and analyze the results?"
4. If students completed the entries from the Tom Farmer problem at an earlier time, review what was done to refresh their memories and to relate the summary and analysis phase to the earlier exercise.

V. Anticipated problems and concerns of students:

1. What is involved in "closing out" a record book?
2. How should ending inventories, depreciation schedules, and interest charges be summarized?
3. How should the production and returns summary be handled?
4. How should the financial summary be handled?

5. What is an analysis measure and how it is used?

6. What are some analysis measures that could be used with a crop project? With a livestock project?

7. Where can I obtain standards to use in judging the outcomes of my enterprises?

8. What is included in returns? expenses?

9. How are labor and management earnings calculated?

10. How are management earnings calculated?

11. How are labor, capital and management earnings calculated?

VI. Suggested learning activities and experiences:

1. After the class has identified and listed their problems and concerns, select those problems which can be solved by reading VAS Unit 2041a. Assign pp. 17-26 for supervised study.

2. After a period of supervised study, conduct a class discussion to answer these problems and concerns.

3. Show class VAS Filmstrip 352A, "Summarizing and Analyzing Records."

4. Distribute lists of efficiency factors and explain how they are to be used.

5. Present formulas to use in calculating analysis factors and in accounting for livestock numbers or quantities of crops. Examples are as follows:

   a. Management earnings = total returns minus total expenses

   b. Labor and management earnings = management earnings plus student labor.

   c. Labor, capital, and management earnings = labor and management earnings plus interest on investment.

   d. Number of animals in ending inventory, plus number died plus number sold including home consumption should equal the number of animals in beginning inventory plus number purchased plus number born. Similar checks on quantities of grain need not result in equal amounts since discrepancies can often be accounted for by shrinkage or overrun.

6. Discuss and answer remaining problems and concern.

7. Show class VAS Filmstrip 353A, "Increasing Earnings through Farm Records."

8. Distribute Student Worksheet #1, "Checklist for Summarizing Records", and have students complete the summary and analysis sections of their record book.

VII. Application procedures:

1. Have students complete the summary and analysis part of the Tom Farmer problems or other record book problems, answering the questions included and completing the enterprise ratings for Bob Jones' swine enterprise.

2. If this problem area is taught in late December or early January to students who have completed their first year of S.O.E. records, it should be followed by an exercise which involves students in the closing of their project records.

VIII. Evaluation:

1. Evaluate and grade student's S.O.E. record books.

2. Administer test included with this packet.

IX. References and aids:

A. From Vocational Agriculture Service -

   1. VAS Units 2041A

   2. VAS Filmstrips 352A and 353A.

   3. Sales and Service Self-Employment Supplement

   4. Analysis Charts and Tabulation Sheets - Crops Package

   5. Analysis Charts and Tabulation Sheets - Livestock Package

   6. Machine Hire Rates Based on Costs

   7. Standards for Measures of Efficiency

B. Included with this problem area -

   1. Student Test

   2. Teacher's Key to Test

   3. Student Worksheet

   4. Transparencies

STUDENT WORKSHEET # 1

CHECKLIST FOR SUMMARIZING RECORDS

Green Sheets

Page II	Total beginning inventory, if any, and carry to bottom on page III.
Page III	Total sales and ending inventory and carry to bottom of page III. Complete bottom and carry to page 15.
Page V	Complete analysis at top of page.

Yellow Sheets

Page II	Total beginning inventory and purchase and carry to bottom of page III.
Page VII, VIII	Total if any and carry to bottom of page III
Page III	Total sales and ending inventory and carry to bottom of page III. Complete bottom and carry to page 15.
Page IX-XI	Total feed pages. Complete totals on page XI and carry totals to page 14.
Page XII	Complete appropriate analysis items. (See page XIII for directions.) Complete ratings on Page XII.

White Sheets

Page 1-3	Total labor by enterprise and carry to page 3. Complete both sections at bottom of page 3, carry to page 14.
Page 4-9	Total all columns and check. Carry totals to bottom of Page 9 and complete. Carry to page 14.
Page 10-11	Total both pages. Complete summary at bottom of page 10. Carry to page 15.
Page 12	Total miscellaneous income and carry to page 15.
Page 13	Finish depreciation schedule if any and carry totals to page 14.
Page 16	Carry total interest, if any, to page 14.
Page 14	Add all expenses and carry to line B page 15.
Page 15	Add returns and enter on line A. Complete lines C-J.

Page B, C	Complete improvement project records
Page D	Complete skills record (Try to have at least 20)

S.O.E.P.

MAKING A CHECK ON LIVESTOCK NUMBERS

Number of animals in ending inventory plus number sold (including home consumption) plus number died = number of animals in beginning inventory plus number purchased plus number born.

Example:

Ending inventory ________
Sales ________
Death loss ________
Total ________

Beginning inventory ________
Purchases ________
Born ________
Total ________

S.O.E.P.

BUSINESS ANALYSIS FORMULAS AND TOM FARMER ANALYSIS

1. Management earnings – total returns minus total expenses

Example:

Total returns ________
Total expenses ________
Management earnings ________

2. Labor and management earnings – management earnings plus student labor

Example:

Management earnings ________
Student labor ________
Labor and management earnings ________

3. Labor, capital and management earnings – labor and management earnings plus interest on investment

Example:

Labor and management earnings ________
Interest on investment ________
Labor, capital and mgt. earnings ________

SAMPLE TEST QUESTIONS

SUMMARIZING AND ANALYZING RECORDS

Completion Section:

1. Total returns minus total expenses equals ______ ______.

2. If a $36,000 tractor with an annual depreciation of $3,000 is held for two years, what is its record book value? ______.

3. ______________ is a bookkeeping method of spreading a capital item over its useful life.

4. Ending inventories should be taken on what date? ______________.

5. Nine pigs farrowed per litter or 15000 lbs of milk per cow are standards for measures of ______________.

Multiple Choice:

1. Which of the following analysis factors measure size of enterprise?

______________________ Number of animals weaned

______________________ Returns above feed cost

______________________ Average daily gain

______________________ Weight produced

2. A farmer or agribusiness owner usually earns money from which of the following?

______________________ Management

______________________ Capital investment

______________________ Labor

______________________ All three of the above

3. The most commonly used measure of efficiency of crop production is:

______________________ Total bushels of production

______________________ Yield per acre

______________________ Ending inventory of the crop minus beginning inventory

______________________ Cash receipts from crop sales

__________________ Yield per acre

__________________ Ending inventory of the crop minus beginning inventory

__________________ Cash receipts from crop sales

Record Keeping Problems:

1. Given the following figures, calculate the number of pigs born or weaned.

   Number in ending inventory - 15 Answer ______

   Number died - 2

   Number sold - 8

   Number in beginning inventory - 2

   Number purchased - 3

2. Calculate the returns per $100 feed given the following figures -

   Totals returns - $3600 Answer ______

   Value of feed

   Feed - $1800

3. Using a straight line depreciation method, and the information provided, fill in the following blanks:

   Bob Jones purchased a rototiller for his garden project on January 1, 1981 at a cost of $300. He estimated that the machine would last 10 years.

   Depreciation for 1981 is __________.

   Remaining cost as of December 31, 1981 would be ________.

TEACHER'S KEY

SAMPLE TEST QUESTIONS

SUMMARIZING AND ANALYZING RECORDS

Completion Section:

1. Total returns minus total expenses equals mgt. earnings.
2. If a $36,000 tractor with an annual depreciation of $3,000 is held for two years, what is its record book value? $30 000.
3. Depreciation is a bookkeeping method of spreading a capital item over its useful life.
4. Ending inventories should be taken on what date? December 31.
5. Nine pigs farrowed per litter or 15000 lbs of milk per cow are standards for measures of efficiency.

Multiple Choice:

1. Which of the following analysis factors measure size of enterprise?

______✓______ Number of animals weaned
_____________ Returns above feed cost
_____________ Average daily gain
______✓______ Weight produced

2. A farmer or agribusiness owner usually earns money from which of the following?

_____________ Management
_____________ Capital investment
_____________ Labor
______✓______ All three of the above

3. The most commonly used measure of efficiency of crop production is:

_____________ Total bushels of production
______✓______ Yield per acre

____________________ Ending inventory of the crop minus beginning inventory

____________________ Cash receipts from crop sales

Record Keeping Problems:

1. Given the following figures, calculate the number of pigs born or weaned.

   Number in ending inventory - 15

   Number died - 2 __20__

   Number sold - 8

   Number in beginning inventory - 2

   Number purchased - 3

2. Calculate the returns per $100 feed given the following figures -

   Totals returns - $3600

   Value of feed __$200__

   Feed - $1800

3. Using a straight line depreciation method, and the information provided, fill in the following blanks:

   Bob Jones purchased a rototiller for his garden project on January 1, 1981 at a cost of $300. He estimated that the machine would last 10 years.

   Depreciation for 1981 is __$30__.

   Remaining cost as of December 31, 1981 would be __$270__.

UNIT C: SUPERVISED OCCUPATIONAL EXPERIENCE

PROBLEM AREA: ESTIMATING INCOME AND EXPENSES FOR CROP AND LIVESTOCK PROJECTS

SUGGESTIONS TO THE TEACHER:

This problem area has been designed for use with tenth-grade or second-year students who are planning to start a crop or livestock production project. The major purpose of the problem area is to teach students how to prepare a budget and to estimate the income and expenses that might accrue from a crop or livestock project. Therefore, the recommended time of teaching this problem area is during the time when students are planning or replanning their S.O.E. programs. Student worksheets which are identical to the budget sections in the Illinois record book, "Records of my Supervised Experience Program" are included. Also, information on some computer programs available from Vocational Agriculture Services is included for teachers who might want to utilize computers in the budget making process.

CREDIT SOURCES:

These materials were developed through a funding agreement, R-33-32-D-0542-388 with the Illinois State Board of Education, Department of Adult, Vocational and Technical Education, Research and Development Unit, 100 N. First Street, Springfield, Illinois 62777. Opinions expressed herein do not reflect, nor should they be construed as policy or opinion of the State Board of Educaton or its staff.

The materials in this problem area were prepared by Paul Hemp or taken from the following sources:

1. Student Worksheets for crop budget and livestock budget are from "Records of My Supervised Experience Program" published by Interstate Printers and Publishers, Inc., Danville, Illinois.
2. Information sheets on feed and labor requirements are from "Farm Management Manual," Cooperative Extension Service, University of Illinois.
3. Information sheets on computer programs are from a more extensive listing published by Vocational Agriculture Service.

TEACHER'S GUIDE

I. Unit: Supervised occupational experience

II. Problem area: Estimating income and expenses for crop and livestock projects.

III. Objectives: At the close of this problem area students will:

1. Understand what a budget is and how a budget can be used.
2. Know why budgeting is important.
3. Know the various income and expense items involved in estimating production or profit.
4. Be able to prepare a budget for a crop or livestock project.

IV. Suggested interest approaches:

1. Begin class discussion by raising the following questions with the class:
    a. What is a budget?
    b. What does a budget include?
    c. Why should I make up a budget before starting my project?
2. Ask the class if the FFA has a budget and what it includes.
3. Ask class to list income items and expense items that should go into a swine budget. Record items on the chalkboard.
4. Ask class to respond to the question "What does it mean to live within your budget?"
5. Distribute examples of an FFA or other budget to show students what might be included.
6. Refer students to the budget outline included in "Records of my Supervised Experience Program" record book.

V. Anticipated problems and concerns of students:

1. What is a budget?
2. What should be included in a budget?
3. How can we estimate various expense items?

4. How can we estimate various income items.

5. What items in a crop budget are most difficult to predict or estimate?

6. What items in a livestock project are most difficult to predict or estimate?

7. Why are budgets important?

8. Where can I get information and data to use in calculating a budget?

9. What is a debit?

10. What is a credit?

11. Are crops on hand at the beginning of the year a debit or a credit?

12. What is meant by fixed costs? Variable costs?

VI. Suggested learning activities and experiences:

1. Have students develop a list of their problems and concerns.

2. Add additional problems and concerns to the student list to cover what is to be taught.

3. Conduct supervised study so students can answer problems and concerns.

4. Conduct a discussion of problems and concerns. Provide information to students which they could not find in the reference material.

5. Distribute copies of information sheets to students and suggest other sources where budget information may be obtained.

6. Have students complete student worksheets using information from the Tom Farmer problem. See Core I problem area on S.O.E. Record Keeping.

7. Have students work out a budget for one of the following projects:

   a. Five acres of corn
   b. Ten acres of soybeans
   c. Three sows and litters
   d. Five feeder cattle
   e. Four hundred laying hens

8. Review and/or define the following terms related to budgeting:

   a. break-even price
   b. fixed costs
   c. variable costs
   d. interest on investment.

9. Have class develop budgets for their own production projects.

VII. Application procedures:

1. Have class develop budgets for their S.O.E. projects.

2. Have students complete budget section in their project record books.

VIII. Evaluation

1. Grade written exercises and worksheets.

2. Evaluate budgets prepared in project record books.

IX. References and aids:

1. VAS Unit 2041a (pages 2-5), Vocational Agriculture Service, University of Illinois.

2. Farm Management Manual, AE-4473, Department of Agricultural Economics, University of Illinois.

3. Records of my Supervised Experience Program. Available from Interstate Printers and Publishers Inc., Danville, Illinois 61832.

4. Standards of Measures of Efficiency, 1981. Available from Vocational Agriculture Service, University of Illinois.

INFORMATION SHEET

Annual Direct Labor Requirements for Crop and Livestock Enterprises

Enterprise	Unit	Annual hours of labor per unit		
		High mechanization.		Low mechanization
		Aver.	efficient work methods	Poor work methods
Corn, Grain	1 acre	3.5	2.0	7.0
Soybeans	1 acre	3.5	2.0	7.0
Wheat	1 acre	1.5	.7	4.5
Oats	1 acre	1.5	.7	4.0
Corn Silage	1 acre	6.0	3.0	20.0
Hay Harvesting				
.5-1.2 tons per A.	1 ton	3.0	2.0	6.0
Over 1.2 tons per A.	1 ton	2.0	1.0	4.0
Silage Harvesting				
1-7.5 tons per cutting	1 ton	.6	.3	2.0
Over 7.5 tons per cutting	1 ton	.3	.1	1.0
Dairy Herd[a]				
10-24 cows	1 cow	115	90	140
25-49 cows	1 cow	90	65	115
50-99 cows	1 cow	75	55	100
Beef Cow Herd, Calf Sold[a]				
1-15 cows	1 cow	25	20	40
15-39 cows	1 cow	15	12	25
40-100 cows	1 cow	10	8	16
Beef Cow Herd, Calf Fed[a]				
1-15 cows	1 cow	40	30	60
15-39 cows	1 cow	25	20	40
40-100 cows	1 cow	20	15	30
Feeder Cattle, Long Fed[a]				
1-40 head	1 feeder	15	10	25
40-119 head	1 feeder	10	7	17
120-200 head	1 feeder	8	5	13

		Annual hours of labor per unit		
Enterprise	Unit	High mechanization. Aver.	efficient work methods	Low mechanization. Poor work methods
Feeder Cattle, Short Fed[a]				
1-40 head	1 feeder	10	8	18
40-119 head	1 feeder	7	4	12
120-200 head	1 feeder	5	3	10
Sheep, Farm Flock[a]				
1-25 ewes	1 ewe	7	5	10
25-49 ewes	1 ewe	5	3	7
50-100 ewes	1 ewe	4	2	6
Hogs				
15-39 litters	1 litter	23	15	35
40-99 litters	1 litter	18	10	30
100-litters or more	1 litter	15	8	25
Feeder Pigs				
1-100 hogs	1 pig	2.2	1.0	4.5
100-149 hogs	1 pig	1.6	.7	3.0
250-500 hogs	1 pig	1.4	.5	2.7
Poultry				
Commercial flocks over 2,000 hens	100 hens	40	20	80

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[a] Includes time for havesting hay and straw and hauling manure in addition to time for caring for livestock.

INFORMATION SHEET

Annual Production and Feed Requirements for Livestock

Enterprise and feedling program	Production or gain	Grain	Protein	Hay	Corn silage	Pasture	Total hay, silage age and pasture
		(bu. of corn equiv. [a])	(lb.)	(tons)	(tons)	(A.U. day)	(Hay equiv. tons [b])
Dairy Cow (including replacements							
Pasture feeding program							
Good dairy cow	13,000 lb. milk 480 lb. beef	100	1100	5.0	...	250	8.0
Average dairy cow	10,000 lb. milk 415 lb. beef	80	900	5.0	...	250	8.0
Drylot feeding program							
Good dairy cow	13,000 lb. milk 480 lb. beef	100	1400	4.0	9.0	...	7.6
Dairy Heifer (one day to 27 months)	1,000 lb.	30	325	4.0	...	90	5.0
Beef Cow (including replacements							
Calf sold	445 lb.	6	70	1.7	...	270[b]	5.0
Calf fed	780 lb.	40	240	2.2	...	280[b]	5.6
Feeder and stocker cattle							
Growing stocker calves (425 to 725 lbs.)							
Hay and pasture program	100 lb.	6	40	.15	...	15[b]	.33
Finishing feeder calves (425 to 1,025 lbs.)							
No silage	100 lb.	10	50	.15	...	4[b]	.20
Corn silage	100 lb.	9	60	.08	.2	5[b]	.21
Finishing feeder yearlings (725 to 1,125) lbs.)							
No silage	100 lb.	12	45	.20	...	5[b]	.26
Corn silage	100 lb.	10	60	.08	.4	5[b]	.30
Sheep							
Ewe and lamb	9 lb. wool 93 lb. meat	2.5	10	.2	...	50[b]	.8
Feeder sheep	100 lb.	8	40	.2	...	20[b]	.4
Hogs							
Raise and finish 1 litter	1,600 lb.	100	1300	...	...	...	...
Raise 1 litter of feeder pigs	475 lb.	35	500	...	...	...	...
Finish one feeder pig	100 lb.	5.8	75	...	...	...	...

Enterprise and feedling program	Production or gain	Grain	Protein	Hay	Corn silage	Pasture	Total hay, silage age and pasture
		(bu. of corn equiv. a/)	(lb.)	(tons)	(tons)	(A.U. day)	(Hay equiv. tons b/)
Poultry							
100 laying hens	1,800 doz. eggs 100 lb. meat	75	3250	...	...	...	...
100 pullets raised to 20 weeks	300 lb. meat	18	900	...	...	...	...

a/

Feed	Corn equivalent	Hay equivalent
Oats, 1 bushel	.5 bushel	...
Barley, 1 bushel	.8 bushel	...
Wheat, 1 bushel	1.1 bushels	...
Corn silage, 1 ton	5.5 bushels	.3 ton
Wilted hay silage	...	.3 ton
Pasture	...	.012 ton

b/ Up to appoximately one-half of the pasture requirements may be corn stalks and small grain aftermath.

Source: Summary of Illinois Farm Business Records, Circulars 1124, 1113, 1097, 1083 and unpublished data from Livestock Enterprise Analysis, Illinois FBFM Association.

INFORMATION SHEET

AG PROGRAMS 81
MICROCOMPUTER PROGRAMS

VOCATIONAL AGRICULTURE SERVICE
436 MUMFORD HALL
1301 W. Gregory Drive
Urbana, Illinois 61801

These programs are designed to run on the Commodore Pet, Apple II Plus, and TRS-80 Model I machines. Programs on the disk for the TRS-80 Model I can be upgraded to run on the TRS-80 III machine also. Be sure you have obtained the appropriate disk(s) for your machine.

The 16 programs are as follows:

1. Livestock Budget
2. Fertilizer Cost
3. Crop Budget
4. Income Possibilities
5. Machinery Economic Decisions
6. Calibration of Field
7. Soil Loss Equation
9. Depreciation Program
10. Greenhouse Heating and Cooling
11. Calf Weaning Weights
12. Pearson Square Instructions
13. Pearson Square Calculations
14. Lawn Planning
15. Cash Flow
16. Grain Marketing

Programs for the Commodore Pet can be run by pressing shift and run/stop simultaneously after the menu has been listed on the screen. The Commodore Programs were run on a 2001 machine. They can also be run on other Commodore Pet machines. If they are run on the 8032 Commodore, those containing graphics (Pearson Square Instructions) should be adapted by use of the following keys before the menu is listed:

```
Print chr $(142)
Poke 213, 39
```

INFORMATION SHEET
CROP BUDGET

Program #3 - Microcomputer Project

Vocational Agriculture Service
434 Mumford Hall
University of Illinois
1301 W. Gregory Drive
Urbana, IL 61801

I. Objectives

This program is designed to allow the user to modify and observe the breakeven price required for a crop to return a profit when input variables are changed.

II. References

A. Author: Andrew A. Anderson
AAA Ag Services
R.R. 1 Box 88A
Leland, IL 60531

B. Others: Farm Management Manual, by R.A. Hinton, Agricultural Economics Department, University of Illinois.
Illinois Agronomy Handbook, Agronomy Department, University of Illinois (These publications can also be obtained through Vocational Agriculture Service)

III. Scope of Program

This program provides for entering budget information for various crops to find total income and costs for the crop, as well as income and costs per unit of yield.

IV. Procedure

A. Inputs: You will need to obtain figures for the following:

ID#	Title	Notes	Specs.
1	Field information		
2	Supply costs/acre		
3	Machine costs/acre		
4	Land cost/acre		
5	Labor cost/acre		
6	Handling costs/bushel		
7	Interest rate		
8	Mangement returns effected		

B. Outputs: The following are the results of the program:

1. costs/unit of yield/acre/yield for all classifications of expenses.
2. total investment per unit of yield, acre, field
3. breakeven prices for wet yield, out of field and dry yield.

V. Other Suggestions

Be sure to study this program to become familiar with computations done and not done. Do not automatically assume anything about how it calculates answers. By controlling the type of input information, a variety of answers may be obtained. Be careful to provide the answers called for by the program.

INFORMATION SHEET

LIVESTOCK BUDGET

Program #1 - Microcomputer Project

Vocational Agriculture Service
434 Mumford Hall
University of Illinois
1301 W. Gregory Drive
Urbana, IL 61801

I. Objectives

This program is designed to allow the user to evaluate the income and costs of livestock production, allowing for comparing various options.

II. References

A. Author: Andrew A. Anderson
AAA Ag Services
R.R.1 Box 88A
Leland, IL 60531

B. Others: Farm Management Manual, by R. A. Hinton, Agricultural Economics Department, University of Illinois. (also available from Vocational Agriculture Service)

III. Scope of Program

By developing this budget based on a phase of similar management, one can make calculations on income and costs for various kinds of livestock enterprises. The phase studied may vary from about a week to a year, as long as average daily feed, etc., is used. Provision is also made for recording daily production of livestock products (milk, eggs, wool, or even manure where applicable).

IV. Procedure

A. Inputs: You will need to obtain figures for the following:
Phase length in days
Animal in group
Beginning value per animal
Feed information: a costs per pound b. pounds feed per day
Labor costs per hour
Average hours labor per day for group
Veterinary costs per animal for phase
Building costs per animal for phase
Death loss as a percent
Interest rate

Other expenses per animal for phase
Value of L.S. product productive for animal per day
Value of an animal at end of phase

B. Outputs: The following are the results of the program:

ID#	Title	Notes		Specs.
1	Feed Data	A.	$/hd/day/feed	
		B.	lbs. fed/group/day	
		C.	$/group/day	
		D.	lbs. fed/animal/phase	
		E.	costs/feed/head/phase	
		F.	pounds fed/group/phase	
		G.	costs/feed/group/phase	
2.	Feed Data Totals	A.	total feed fed/animal/day	
		B.	total cost of feed/animal/day	
		C.	total feed fed/group/day	
		D.	total cost of feed/group/day	
		E.	total feed fed/animal/phase	
		F.	total $ feed/ fed/animal/phase	
		G.	total feed fed/group/phase	
		H.	total $ feed fed/group/phase	
3.	Labor Data	A.	hours of labor/animal/day	
		B.	hours of labor/group/day	
		C.	hours of labor/animal/phase	
		D.	hours of labor/group/phase	
		E.	labor cost/animal/day	
		F.	labor cost/group/day	
		G.	labor cost/animal/phase	
		H.	labor cost/group/phase	
4.	Vet costs/group/phase			
5.	Building/group/phase			
6.	Interest cost per animal and group per phase			
7.	Other expenses per group for phase			
8.	Summary of Total Costs	A.	animal/day	
		B.	group/day	
		C.	animal/phase	
		D.	group/phase	
9.	Beginning value per animal and group			

10. Total Costs & Beginning Value of:
    - A. animal/day
    - B. group/day
    - C. animal/phase
    - D. group/phase

11. Income from L.S. Product Production
    - A. per group per day
    - B. per animal per phase
    - C. per group per phase

12. Value of group at end of phase

13. Totals of income and values per classification

14. Profit or loss per classification

V. Other Suggestions

Be sure to study this program to become familiar with computations done and not done. Do not automatically assume anything about how it calculates answers. By controlling the type of input information, a variety of answers may be obtained.

Note: Value of production per animal per day refers to livestock products produced. Also total income and value per day for animal and group reflects daily costs vs. product production value. (If you want to make a rough estimate of manure credits, you might figure $.05 per day for steers and $.02 for feeder pigs as possibilities.)

STUDENT WORKSHEET

CROP BUDGET - EXPECTED INCOME AND EXPENSES

This Worksheet is taken from "Records of My Supervised Experience Program" book available from the Interstate Printers and Publishers, Danville, Illinois 61832. The crop budget section is reproduced here as a student worksheet.

Expected Income or Credits:	Quantity	Value	
1. Crops to be sold or used	____	____	
2. Crops in ending inventory	____	____	
3. Total income or credits			$______
Expected Expenses or Debits:			
4. Crops to be purchased (or received as gifts)	____	____	
5. Crops in beginning inventory	____	____	
6. Machinery, power, and/equipment		____	
7. Seed $____, fertilizer $____, pesticides $____		____	
8. Labor: (total) ____ hours at $____ per hour		____	
9. Land: taxes $____ (if owned); rent $____ per a. or ________% of crop		____	
10. Interest: _____% on $_________ (beginning investment)		____	
11. Misc.: (building, drying, insurance, etc.)		____	
12. Total expenses or debits (lines 4 though 11)			$______
13. Profits: (expected income minus expenses; line 3 minus line 12)			$______

STUDENT WORKSHEET

LIVESTOCK BUDGET - EXPECTED INCOME AND EXPENSES

This Worksheet is taken from "Records of My Supervised Experience Program" book available from the Interstate Printers and Publishers, Danville, Illinois 61832. The livestock budget section is reproduced here as a student worksheet.

Expected Income or Credits:	Number	Weight	Value	
1. Animals to be sold or butchered for home use.	____	____	$____	
2. Animals in ending inventory (end of year)	____	____	____	
3. Livestock products to be sold or consumed*	____	____	____	
4. Total income or credits (lines 1, 2, and 3)				$_____
Expected Expenses or Debits:				
5. Animals to be purchased (or received as gifts)	____	____	____	
6. Animals in beginning inventory (first of year)	____	____	____	

	Value of feed:	
Feed:		
7. Grain: ____ bu. corn at $____	$____	
8. ____ bu. oats at $____		
9. Pro. supp.:____lb. at $____ per cwt	____	
10. Hay:____ t. at $____ per t.	____	
11. Pasture: ____ acres at $____ per acre	____	
12. Other feed: ____________________	____	
13. Total feed		$____
14. Machinery, power and equipment		_____
15. Buildings		_____

16. Labor: (total) _______ hours at $_______ per hour _____

17. Interest: _____% on $_____ (beginning of the year investment) _____

18. Other livestock expense: (veterinary, registration, insurance, etc.) _____

19. Total expenses or debits (lines 5 through 18) $_____

20. Profits (expected income less expected expenses: line 4 minus line 19) $_____

*Livestock products are dairy products, eggs, or wool.

STUDENT WORKSHEET

COST OF PRODUCTION - CROPS

Item	Your Cost/Acre	
Variable costs		
Seed	________	
Fertilizer	________	
Insecticides	________	
Herbicides	________	
Mach. repairs & supplies	________	
Fuel & Oil	________	
Machinery hire	________	
Labor	________	
Interest on cash expenses	________	
Other ______________	________	
Total cash costs		________
Fixed costs		
Machinery depreciation	________	
Insurance	________	
Taxes	________	
Other__________	________	
Total fixed costs		________
TOTAL COSTS		

UNIT D: Livestock Science

PROBLEM AREAS:

1. Advanced feeding and caring for livestock
2. Providing housing and equipment for livestock
3. Judging and evaluating meat and livestock products

UNIT D: LIVESTOCK SCIENCE

PROBLEM AREA: ADVANCED FEEDING AND CARING FOR LIVESTOCK

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth-grade or second-year students enrolled in an agricultural occupations program. The recommended time for teaching this problem area is during the winter months. The estimated time for teaching this problem area is 6 to 9 days depending on how much time the teacher wishes to spend on discussion and conducting the suggested exercises. The materials in this problem area were selected and written with the following assumptions:

1. Students need to understand the nutrient requirements established for the efficient feeding of livestock.

2. Students need instruction on proper methods of handling and caring for livestock in various stages of production for maximum efficiency and returns.

The instructor is encouraged to conduct a local search to locate other supplementary materials. The items in this problem area are for reference or modification as the teacher adapts this material to his/her local situation.

CREDIT SOURCES:

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The teacher's guide, worksheets, transparency discussion guide, student jobsheets, and sample test questions were developed by Jerry Pepple, Department of Vocational and Technical Education, University of Illinois. The transparency masters and animal nutrition study guide were prepared by Vocational Agriculture Service, University of Illinois.

Suggestions and guidance in the development of these materials were provided by the Rural Core Curriculum Pilot Test Teachers.

TEACHER'S GUIDE

I. Unit: Livestock science

II. Problem area: Advanced feeding and caring for livestock

III. Objectives: At the end of this problem area, the students will be able to:

1. Calculate a balanced feeding ration for a given specie and age of livestock for marketing animals and for breeding animals.
2. Contrast the methods of feeding and caring for livestock during the summer months and the winter months.
3. Discuss the approved methods of individual livestock identification and why it is important to identify individual breeding animals.
4. Summarize the approved management practices which should be followed in developing a "yearly management program" for beef, swine, and/or sheep breeding enterprises.

IV. Suggested interest approaches:

1. Organize a field trip to a local livestock breeding operation. Observe the facilities and have the manager discuss the operation and answer student questions. If possible, time the field trip so the students can observe a management operation, i.e., dehorning, castration, identification marking, artificial inseminiation, or catching and restraining animals.
2. Display various pieces of livestock equipment and have students identify the items and explain their uses.
3. Have students draw and cut out a left and right pig's ear from a piece of construction paper. Assign each student an identification number and let them mark the "ears". Use VAS Unit 1037 , Section 5, as a reference. Discuss the importance of marking breeding animals and identify other methods used to mark breeding animals.
4. Have students prepare a bulletin board showing proper and improper methods of feeding and caring for livestock herds.
5. Promote student discussion and interest by asking the following lead questions. "Has any student worked with livestock herds?" "What specific tasks have you done or assisted in?" "What are some local methods used to (a) mark animals, (b) castrate animals?" "Has anyone given animals shots?" "If so, for what reason?" "Has anyone been responsible for feeding livestock herds?"

V. Anticipated problems and concerns of students:

A. Beef managing and feeding

1. How old should heifers be when they are bred the first time?
2. What factors should be considered when planning a calving season?
3. If a high percentage of the cows are not being bred, what could be some reasons?
4. How many days should bulls run with the cows? Why?
5. How many cows can one bull serve?
6. What factors affect the success of an AI program?
7. How can I evaluate herd performance?
8. What vitamins and minerals need to be fed to beef animals?
9. What are the purposes of the vitamins and minerals?
10. What are the deficiency symptoms of the major vitamins and minerals?
11. What factors should be considered when planning a balanced winter ration? Lactation ration? Creep feeding ration?
12. What special feeding and management practices need to be considered when raising replacement heifers and bulls?
13. How can I plan a complete yearly management program?
14. What are some methods used to:
    a. restrain beef animals
    b. dehorn beef animals
    c. castrate beef animals
    d. mark beef animals

B. Swine managing and feeding

1. How should I feed and care for boars and sows?
2. When and how should sows be bred?
3. How should I feed and care for the sows during the gestation period?

4. Which type of farrowing unit should I use?

5. What care should I give the sow at farrowing time?

6. What should I feed the sow after farrowing?

7. What care should I give the baby pigs?

8. What vitamins and minerals need to be fed to swine?

9. What do the vitamins and minerals do and what are their deficiency symptoms?

10. What are some methods used to:

    a. restrain swine?
    b. castrate swine?
    c. mark swine?

C. Sheep managing and feeding

1. How should I feed the ram?

2. How should I feed the ewe flock?

3. What can happen if an ewe has inadequate nutrition during pregnancy?

4. How should I manage the ewe during gestation?

5. How should I manage the ewe during lambing and lactation?

6. How should I feed and manage lambs from birth to weaning?

7. How should I feed and manage the lamb from weaning to market?

8. How do I feed and care for yearlings?

9. How do I feed and care for orphaned lambs?

10. What vitamins and minerals need to be fed to sheep? What are the deficiency symptoms?

11. How can I prepare a balanced sheep ration?

12. What are the methods used to:

    a. restrain sheep?
    b. dock sheep?
    c. castrate sheep?
    d. mark sheep?

VI. Suggested learning activities and experiences:

1. Begin the instructional phase of this problem area with the following steps:

    a. Conduct an interest approach.
    b. Assist student in the identification of goals and objectives.
    c. Have students identify their problems and concerns.
    d. Separate their problems and concerns by livestock specie.

2. Select those problems and concerns which relate to beef animals. Have students answer these problems and concerns through class discussion and from information supplied by the teacher. Follow the same procedure for swine and sheep. Use the following instructional aids:

    a. VAS Unit 1010b, Managing the Beef Cow Herd

    b. VAS Unit 1034a, Caring for the Swine Herd During Breeding and Gestation

    c. VAS Unit 1037b, Caring for the Sow and Litter at Farrowing Time

    d. VAS Unit 1060, Feeding and Managing Sheep and Lambs

    e. VAS Animal Nutrition Transparencies

3. The problems can be handled by one or more of the following approaches:

    a. supervised study

    b. small group discussions

    c. resource speakers

    d. discussion and visual aids, and

    e. demonstrations

4. Distribute Worksheet, "Feeding and Caring for Livestock." Have students complete the worksheet and submit for evaluation.

5. Identify the advantages and disadvantages of various methods of individual livestock identification. Select one method of identification and demonstrate it.

6. Invite a veterinarian to speak to the class to discuss selected livestock management techniques, i.e., castrating, dehorning, giving shots, disease and insect control, etc.

7. Have students calculate the acres required on their own farm (or neighbors) to maintain a cow/calf unit (sow, pig) (ewe, lamb).

8. Select an example farm and have students plan a feeding system for a cow/calf operation (sow, pig) (ewe, lamb).

9. Have the class develop a list of approved practices which should be followed after a cow calves, sow farrows, or ewe lambs.

10. Identify the various feeding methods used in the local community in cow/calf operations for summer and winter. Discuss their advantages and disadvantages. Also discuss swine and sheep operations in the local community.

11. Use the Job Sheet, "Livestock Management Skills," and complete all or part of the suggested exercises.

12. Have students bring in feed tags and discuss the information found on the tags and how the information should be used when formulating feed rations. Use Transparency 50, Feed Tag Analysis, for additional information and discussion.

13. Have students bring in samples of crop by-products in the local community which are used as roughages. Have students estimate the nutritional value of the identified roughages by using feed tables. Have students prepare a balanced feed ration, which includes their feed tag samples and roughage samples, for a specific livestock group. Calculate total feed cost. Use the Worksheet, "Computing Feed Rations." Various feeds and their analysis should be located in a Feeds and Feeding Text.

14. Divide students into small groups and assign them an example farm or home farm and have each group outline a yearly breeding program. Students could consider:

    a. criteria for selecting dams and sires
    b. use of purebred or crossbred animals
    c. breeding calendar - breeding, birth and weaning times.
    d. male-female ratio

15. Have students place a cull-keep ring of breeding heifers, breeding ewes, and/or breeding gilts based upon their physical characteristics and pedigree records. Discuss the students placings and reasons.

16. Have students select a purebred breeder's livestock association. Write letters requesting information about the breed. Use Core I problem area, Selecting Livestock, for names and addresses of breed associations.

VII. Application procedures:

1. Students should develop an understanding of approved management practices which are necessary in caring for a livestock operation.

2. Students who have livestock, should apply the knowledge and skills toward their livestock S.O.E. project.

VIII. Evaluation:

1. Administer test using some or all the sample questions included with this problem area.

2. Evaluate student worksheets

3. Evaluate student livestock management plan

4. Evaluate student skill demonstration in performing one or more livestock skills.

5. Grade students placing of livestock judging ring(s).

IX. References and aids:

The following materials are available from Vocational Agriculture Service, University of Illinois:

1. VAS Unit, 1010b, Managing the Beef Cow Herd

2. VAS Unit, 1034a, Caring for the Swine Herd during Breeding and Gestation.

3. VAS Unit, 1036a, Swine Feeds and Feeding

4. VAS Unit 1037b, Caring for the Sow and Litter at Farrowing Time

5. VAS Unit 1060, Feeding and Managing Sheep and Lambs

6. VAS Transparencies and Discussion Guide, Animal Nutrition

Included with this problem area:

1. Student Worksheet, Feeding and Caring for Livestock

2. Student Job Sheet, Livestock Management Skills

3. Sample Test Questions

STUDENT WORKSHEET

FEEDING LIVESTOCK AND CARING FOR THE BEEF COW HERD

(References - Questions 1-8; Animal Nutrition Transparencies and back page of Illinois Production Record Book)

1. Name six functions of minerals in an animal's diet -

   a.
   b.
   c.
   d.
   e.
   f.

2. Identify the major and trace minerals.

A. Major	B. Trace

3. Complete the following chart. Identify four fat soluble vitamins and five water soluble vitamins, give function, deficiency symptoms and source.

   A. Fat soluble vitamins

Vitamin	Function	Deficiency Symptom	Source

B. Water soluble vitamins

Vitamin	Function	Deficiency Symptom	Source

4. Complete the chart for female beef, swine, and sheep. (Note: For reference, refer to back cover of production record book).

Class	Recommended Age for Breeding (months)	Recommend Size for Breeding	Duration of Heat Period	Length of Gestation Days
Beef				
Swine				
Sheep				

5. Define a "pasture day."

6. Identify "one animal unit" for the following:

One Unit Equals (Number of head):

a. Mature cow or bull __________
b. Yearling cattle __________
c. Feeder cattle __________ (lbs.)
d. Weaned calves __________
e. Pigs __________
f. Mature sheep __________
g. Weaned lambs __________

7. Calculate the pasture growing days for your area by using the average date of last freeze in spring and the first freeze in the fall.____________

8. Calculate the animal units and then assume they were on pasture for 90 days and calculate the pasture days for:

Units P.D.

a. 50 cows, 2 bulls, and 45 yearling cattle, and 42 weaned calves. A.______________

b. 150 pigs B.______________

c. 40 ewes, 3 rams, and 50 weaned lambs C.______________

(Reference - Questions 9-17; VAS Unit 1010 b)

9. When selecting a herd sire, what criteria should you consider?

1.
2.
3.
4.
5.
6.
7.
8.

10. What questions should be answered when considering a crossbreeding program for your beef enterprise?

1.
2.
3.
4.
5.
6.
7.
8.

11. The success or failure of an artificial insemination program is dependent on what major factors?

1.
2.
3.
4.
5.
6.

12. What are the benefits of keeping good production records?

    1.
    2.
    3.
    4.
    5.
    6.
    7.
    8.

13. What basic information is required from a herd owner if he/she wishes to participate in the Illinois Beef Performance Testing Program?

    1.
    2.
    3.
    4.
    5.

14. Identify some approved practices which should be followed during the calving season.

    1.
    2.
    3.
    4.
    5.
    6.
    7.
    8.
    9.
    10.
    11.

15. Identify the common methods used for castrating beef animals.

    1.
    2.
    3.

16. What methods are used for dehorning cattle?

    1.
    2.
    3.

17. Locate pictures of each of the methods used to castrate and dehorn cattle - (Use old magazines) - identify each method.

STUDENT WORKSHEET

FEEDING AND CARING FOR SWINE AND SHEEP

(Reference - Questions 1-7; VAS Unit 1036a)

1. Identify four requirements of swine which should be considered when planning a feed ration.

   a.

   b.

   c.

   d.

2. Why do hogs not thrive well on corn alone?

3. Name five cereal grains which can be used in a hog's ration and identify some advantages and disadvantages for each grain.

   a.
   b.
   c.
   d.
   e.
   f.

4. Identify four feeds used locally as protein sources for swine.

   a.
   b.
   c.
   d.

5. How do local swine producers develop rations which are balanced for minerals and vitamins?

6. What are antibiotics and why are they added to swine rations?

7. Identify forage crops which are used locally by swine producers and give some advantages and disadvantages of these crops.

(References - Questions 8-11; VAS Units 1034a and 1037b)

8. Briefly outline the care which should be given to young boars and sows.

   a.

   b.

   c.

9. How much should sows gain in weight during pregnancy? Why?

10. Identify some advantages and disadvantages of using farrowing pens and/or farrowing stalls.

11. List some approved practices to follow when caring for the sow and pigs at farrowing time.

(Reference - Questions 12-20; VAS Unit 1060)

12. What concentrate mixtures are commonly used in the local community for ewe flocks?

14. Identify six problems which could result from a ewe having inadequate nutrition during pregnancy.

    1.
    2.
    3.
    4.
    5.
    6.

15. Why has self-feeding of pregnant ewes been increasing?

16. Define and explain how to control pregnancy disease in ewes.

17. What practices can be followed during the lambing season to improve your percentage of live lambs?

18. Briefly discuss how to perform the following skills:

    a. Disinfecting the navel-

    b. Correcting inverted eyelids-

    c. Docking-

    d. Castrating-

19. What should be the crude protein content for the following rations:

    a. Creep ration -

    b. Early-weaned ration-

    c. Young lambs-

    d. Market lambs-

20. Identify good management practices you should follow when raising orphaned lambs. Consider feeding rations and practices, housing, needed equipment.

STUDENT WORKSHEET

COMPUTING FEED RATIONS

Problem

A farmer needs to formulate an efficient feed ration, using the grains commonly and readily available. Make up a low cost feed mixture for the farmer and use the list of feeds as suggested by your instructor. Prices can be otained from the local feed store or in the latest Vo. Ag. Service AIDS copy.

A. The farmer needs you to compute a ration for:

B. The farmer has the following feeds available:

RATION

	Lbs. Feed	Total Dry Matter (lbs)	Digestible Protein (lbs)	Total Digestible Nutrients (lbs)	(Other)	Cost
Requirements (Range)						
Total						

STUDENT JOB SHEET

LIVESTOCK MANAGEMENT SKILLS

Restraining Beef Cattle

Objectives:

1. To become familiar with various methods of cattle restraints
2. To be able to determine the proper method of restraint to use when considering:
   a. age and size of animal
   b. available labor
   c. available equipment
   d. type of operation to be performed
3. To be able to successfully demonstrate a method of restraining cattle

Materials:

1. noseleads
2. hobbles
3. rope - about 40 feet long
4. trimming rack

If the actual equipment cannot be obtained, use slides or transparencies, or have students locate pictures in magazines or catalogs.

Procedures:

1. Arrange a field trip to a student's farm to demonstrate a selected method for restraining beef animals (select animals which are accustomed to being handled and haltered.)
2. Explain and demonstrate restraining equipment.
   a. review names of tools
   b. discuss proper use and care of tools
3. Give students opportunity to practice method of restraining beef animals.
4. If a field trip is not possible, use a student to demonstrate casting and restraining with a rope.

Questions:

1. When should nose leads be used for restraining animals?____

   ____

2. Which method is safest for the handler and the animal?

   ____

   ____

3. What operations can be safely performed on a beef animal when restrained by:

   a. noseleads:

   b. rope:

   c. trimming rack:

   d. holding chute:

Observation: Record the major steps involved in restraining a beef animal.

Conclusions:

Discuss the results of the demonstration as they would apply to caring for your beef S.O.E enterprise. (Identify approved practices and necessary equipment.)

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JOB SHEET

LIVESTOCK MANAGEMENT SKILLS

MARKING AND IDENTIFYING SWINE AND BEEF

Objectives:

1. To be able to identify equipment and methods used to mark swine or beef animals.
2. To understand advantages and disadvantages of each method used in identifying swine and beef.
3. To understand when it is necessary to mark swine or beef animals.

Materials:

1. ear notchers
2. ear tags
3. tattooing instrument
4. construction paper cut the shape of an ear
5. sample ear marking system

Procedures:

1. Have students identify various pieces of equipment used for marking livestock. Identify the equipment the students are familiar with and have the student describe their experiences.
2. Discuss the marking equipment indicating the advantages and disadvantages of each. Use the transparencies as a supplementary aid.
3. Have student cut out three or four sets of "ears" using construction paper. Establish litter numbers and individuals animal numbers for a swine breeding operation. (refer to VAS Unit 1037b, part 5, and the transparencies for marking livestock).
4. Have students mark the "ears" for identification.
5. Follow the same procedure with ear tags and tattooing.
6. Arrange a field trip to observe animals being marked. If possible, let students assist in the marking of the animals.

Questions:

1. Which marking system is best for:

   a. swine_____________________________________

   b. beef______________________________________

2. Why is it necessary to mark animals?

   ____

   ____

   ____

3. Which method is more permanent?_______________

4. Which method is easier and quicker?___________

Observation:

Record the step-by-step procedure used in marking the animals.

Conclusion: Discuss which mark method and numbering system you would use on your beef or swine S.O.E.P.

TEACHER'S KEY

STUDENT WORKSHEET

FEEDING LIVESTOCK AND CARING FOR THE BEEF COW HERD

(References - Questions 1-8; Animal Nutrition Transparencies and back page of Illinois Production Record Book)

1. Name six functions of minerals in an animal's diet -

    a. Give strength and rigidity to bones and teeth.
    b. Necessary for building body tissue.
    c. Aid in regulation of body processes.
    d. Aid in digestion of food.
    e. Interact with vitamins.
    f. Influence oxygen-carrying capacity of blood.

2. Identify the major and trace minerals.

A.	B.
Major	Trace
Sodium	Chromium
Chlorine	Cobalt
Calcium	Copper
Phosphorus	Fluorine
Magnesium	Iodine
Potassium	Iron
Sulfur	Manganese
	Molybdenum
	Selenium
	Silicon
	Zinc

3. Complete the following chart, identify four fat soluble vitamins and five water soluble vitamins, give function, deficiency symptoms and source.

    A. Fat soluble vitamins

		Deficieny	
Vitamin	Function	Symptom	Source
A	Night vision	Night blindness	Green leafy hays, pasture, corn

D	Bone & teeth development	Rickets	Direct sunlight, sun-cured hay
E	Cell maintenance	Reproductive problems	Green plants, green hay
K	Blood clotting	Hemorrhaging	Green pasture, good quality hay

B. Fat soluble vitamins

Vitamin	Function	Deficiency Symptom	Source
B_1	Energy Metabolism	Reduction in appetite	Cereal grains, green pastures, good quality hay
B_2	Energy Metabolism	Slow growth	Green pastures, good quality hay
B_{12}	Enzyme	Reproductive failure	Tankage, fish meal
Biotin	Enzyme system	Skin problems	Milk and synthetic biotin
C	Resistance to infection	Loose teeth Weak bones	Green pasture and citrus fruit

4. Complete the chart for female beef, swine, and sheep. (Note: For reference, refer to back cover of Illinois Production Record Book).

Class	Recommended Age for Breeding (months)	Recommended Size for Breeding	Duration of Heat Period	Length of Gestation Days
Beef	15-24	650-750 lbs.	3-48 hours	283
Swine	8-10	180-200 lbs.	1-3 days	114
Sheep	18-20	110-130 lbs.	1-3 days	150

5. Define a "pasture day."

Amount of pasture eaten in one day by one animal unit.

6. Identify "one animal unit" for the following:

		One Unit Equals:
a.	Mature cow or bull	1
b.	Yearling cattle	1½
c.	Feeder cattle	1000 lbs.
d.	Weaned calves	2
e.	Pigs	15
f.	Mature sheep	5
g.	Weaned lambs	10

7. Calculate the pasture growing days for your area by using the average date of last freeze in spring and the first freeze in the fall.__________.

8. Calculate the animal units and then assume they were on pasture for 90 days and calculate the pasture days for:

		Units	P.D.
a.	50 cows, 2 bulls, and 45 yearling cattle, and 42 weaned calves.	A. 103	9,270
b.	150 pigs	B. 10	900
c.	40 ewes, 3 rams, and 50 weaned lambs	C. 48	4,320

(Reference - Questions 9-17; VAS Unit 1010 b)

9. When selecting a herd sire, what criteria should you consider?

    1. Large framed with plenty of size for age.
    2. Structurally correct (including feet and legs).
    3. A good 205-day weight (adjusted for age of dam) and a good 365-day adjusted weight.
    4. Good muscling.
    5. Calved from a good-producing cow that consistently ranks in the top half of the herd.
    6. Sired by a bull that has been doing a good job of settling cows and siring large-framed, fast gaining calves.
    7. Healthy
    8. Normal, testicular development; both testicles present, fully decended, sound, and equal in size.

10. What questions should be answered when considering a cross breeding program for your beef enterprise?

    1. Should I produce two-breed or three-breed cross calves?
    2. Which breeds should I use and in what order of rotation?
    3. Should I raise my own replacements or should I try to buy them?
    4. What are the major strong points and weak points of the breeds I am considering?
    5. What breeds are most readily available in my area?
    6. Should I use articifical insemination?
    7. Should I consider using any of the new exotic breeds?
    8. Should I consider using some dairy breeding in my crossbreeding program?

11. The success of failure of an artificial insemination program is dependent on what major factors?

    1. Level of nutrition
    2. Animal health
    3. Detection of heat
    4. Time of insemination
    5. Quality of semen used
    6. Skill and knowledge of the inseminator

12. What is the benefit of keeping good production records.

    1. Help measure herd productivity.
    2. Evaluate bull performance.
    3. Identify high-producing cows.
    4. Help cull out low-producing cows.
    5. Indicate differences in gaining ability of calves and yearlings.
    6. Provide permanent yearly records.
    7. Help select herd replacements.
    8. Supplement what can be seen with the naked eye and retained in memory.

13. What basic information is required from a herd owner if he/she wishes to participate in the Illinois Beef Performance Testing Program?

    1. Calf identification
    2. Dam identification
    3. Sire identification
    4. Accurate birth date of calf
    5. Age of dam

14. Identify some approved practices which should be followed during the calving season.

    1. Have cows in an area that can be checked easily.
    2. Keep the cows in a clean area or facility during calving.
    3. When a cow has difficulty calving, examine her to find out whether the calf is being delivered in a normal position (head between and slightly above the front feet). If difficult birth is evident, you may wish to contact your veterinarian promptly.
    4. Disinfect the navel with a 2-percent iodine tincture solution.
    5. Be sure the cow claims her calf and permits it to nurse. It is essential that a calf receive the colostrum soon after birth. You will often have to help a calf nurse a dam that has very large teats or an udder that hangs very low. Also, you should help weak calves nurse.
    6. Have facilities available to pen a cow and her calf if needed.
    7. If cows fail to clean properly (retained placenta), within 12 to 18 hours after calving, contact your veterinarian.
    8. Keep the cows that have calved separate from those that are still to calve.
    9. Keep a close watch for signs of mastitis or injury to udders. You may have to milk out some of the cows for the first couple of days after calving.
    10. Be sure the cow herd has access to plenty of clean, fresh water.
    11. Ear tag or tatoo the calf and record information on your calving record. Also, make a note of such information as ease of calving, abnormalities, availability of colostrum, strength of calf, birth weight of calf, and temperment of cow.

15. Identify some common methods used for castrating beef animals.

    1. elastrator bands
    2. knife
    3. burdizzo (clamp)

16. What methods are used for dehorning cattle?

    1. mechanical
    2. electricial
    3. chemical

17. Locate pictures of each of the methods used to castrate and dehorn cattle - (Use old magazines) - identify each method.

TEACHER'S KEY

STUDENT WORKSHEET

FEEDING AND CARING FOR SWINE AND SHEEP

(Reference - Questions 1-7; VAS Unit 1036a)

1. Identify four requirements of swine which should be considered when planning a feed ration.

   a. Maintenance

   b. Growth

   c. Fattening

   d. Production and reproduction

2. Why do hogs not thrive well on corn alone?

   (refer to Part 1a, VAS 1036a)

3. Name five cereal grains which can be used in a hog's ration and identify some advantages and disadvantages for each grain.

   a. Corn
   b. Oats
   c. Wheat
   d. Barley
   e. Grain sorghum
   f. Rye

   (refer to Part 1a for advantages and disadvantage)

4. Identify four feeds used locally as protein sources for swine.

   a.
   b.
   c.
   d.

   (answer through class discussion)

5. How do local swine producers develop rations which are balanced for minerals and vitamins?

   (answer through class discussion)

6. What are antibiotics and why are they added to swine rations?

   (refer to part 1e, VAS Unit 1036a)

7. Identify forage crops which are used locally by swine producers and give some advantages and disadvantages of these crops.

   (answer through class discussion)

(References - Questions 8-11; VAS Units 1034a and 1037b)

8. Briefly outline the care which should be given the young boars and sows. Consider the following:

   a. Feeding practices (refer to VAS Unit 1034a, Part1)

   b. Shelter

   c. Breeding practices

9. How much should sows gain in weight during pregnancy? Why?

   (refer to VAS 1034a, Part 3)

10. Identify some advantages and disadvantages of using farrowing pens and/or farrowing stalls.

    (refer to VAS Unit 1037b, Parts 3,4,& 5)

(Reference - Questions 12-20; VAS Unit 1060)

12. What concentrate mixtures are commonly used in the local community for ewe flocks?

13. What is meant by "flushing ewes?"

    (refer to VAS Unit 1060, Part 2)

14. Identify six problems which could result from an ewe having inadequate nutrition problems during pregnancy.

    1. A higher percentage of ewes with pregnancy disease
    2. A decrease in birth weights
    3. Weaker lambs at birth
    4. An increase in infant lamb mortality
    5. Slower gaining lambs
    6. Lower milk yields during lactation

15. Why has self-feeding of pregnant ewes been increasing?

    (refer to VAS Unit 1060, Part 2)

16. Define and explain how to control pregnancy disease in ewes.

    (refer to VAS 1060, Part 3)

17. What practices can be followed during the lambing season to improve your percentage of live lambs?

    (refer to VAS Unit 1060, Part 4)

18. Briefly discuss how to perform the following skills:

    a. Disinfecting the navel -

    b. Correcting inverted eyelids

    c. Docking (refer to VAS Unit 1060, Part 5)

    d. Castrating

19. What should be the crude protein content for the following rations:

    a. Creep ration -

    b. Early-weaned ration (refer to VAS Unit 1060, Parts 6 & 7)

    c. Young lambs

    d. Market lambs

20. Identify good management practices you should follow when raising orphaned lambs. Consider feeding rations and practices, housing, needed equipment.

    (refer to VAS 1060, Part 8)

(EXAMPLE KEY)

STUDENT WORKSHEET

COMPUTING FEED RATIONS

Problem

The farmer needs to feed an efficient concentrate mixture to the herd, using the grains which are available, but wants it to be as cheap as possible. Make up a mixture which you would advise him to use. Use your list of feeds and prices in selecting your feeds.

A. The farmer wants you to compute a ration for:

A number of 425 lb. feeder steers

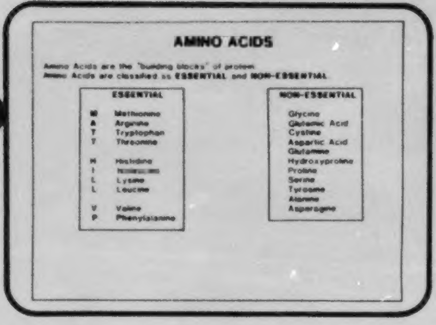
B. The farmer has available for feeding:

Corn, and alfalfa hay

RATION

	Lbs. feed	Total dry matter (lbs.)	Digestible protein (lbs.)	Total digestible nutrients (lbs.)	Cost
Requirements (Range)	12+	14.8-17.5	1.39-1.52	11.6-13.2	
Ration:					
Corn, #2 dent	4	3.40	.27	3.20	$.08
Corn silage	10.5	2.90	.13	1.92	.05
Alfalfa hay	8	7.24	.87	4.06	.08
Oats, not P.C.	2	1.80	.19	1.40	.05
Dried Beet Pulp	1.5	1.37	.06	1.03	.07
TOTAL	26	16.71	1.52	11.61	$.33

SELECTED TRANSPARENCIES–ANIMAL NUTRITION



AMINO ACIDS

Amino Acids are the "building blocks" of protein.
Amino Acids are classified as **ESSENTIAL** and **NON-ESSENTIAL**

ESSENTIAL

M Methionine
A Arginine
T Tryptophan
T Threonine

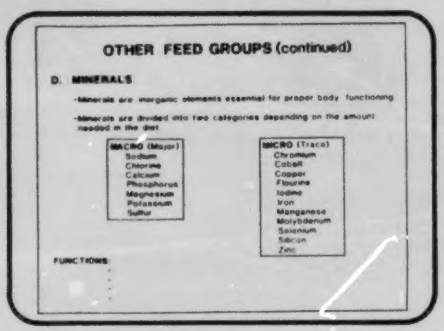
H Histidine
I [illegible]
L Lysine
L Leucine

V Valine
P Phenylalanine

NON-ESSENTIAL

Glycine
Glutamic Acid
Cystine
Aspartic Acid
Glutamine
Hydroxyproline
Proline
Serine
Tyrosine
Alanine
Asparagine

At least twenty-two amino acids are necessary for normal growth and development in the animal. Ruminants can synthesize all 22 in the rumen. Non-ruminants cannot synthesize 10 of 22. These are therefore referred to as "essential." They must be supplied in the diet of non-ruminants.



OTHER FEED GROUPS (continued)

D. MINERALS

-Minerals are inorganic elements essential for proper body functioning

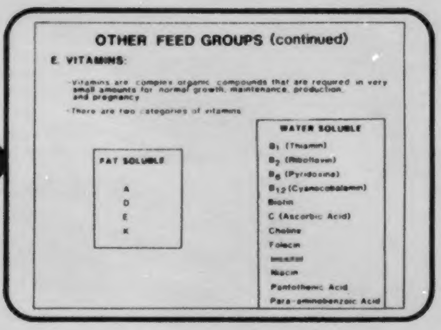
-Minerals are divided into two categories depending on the amount needed in the diet

MACRO (Major)
Sodium
Chlorine
Calcium
Phosphorus
Magnesium
Potassium
Sulfur

MICRO (Trace)
Chromium
Cobalt
Copper
Flourine
Iodine
Iron
Manganese
Molybdenum
Selenium
Silicon
Zinc

FUNCTIONS:
-
-
-
-

Some of the functions of minerals are:
- Give strength and rigidity to bones and teeth
- Necessary for building body tissues
- Aid in regulation of body processes
- Aid in digestion of food (regulate acid--base balance)
- Interact with vitamins
- Influence oxygen carrying capacity of blood



OTHER FEED GROUPS (continued)

E. VITAMINS:

-Vitamins are complex organic compounds that are required in very small amounts for normal growth, maintenance, production, and pregnancy

-There are two categories of vitamins

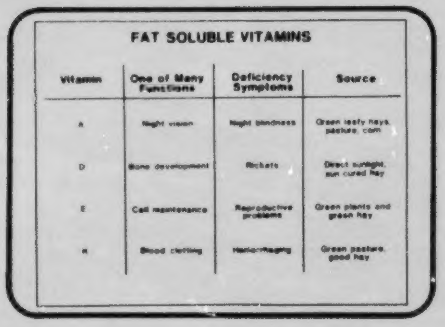
FAT SOLUBLE

A
D
E
K

WATER SOLUBLE

B_1 (Thiamin)
B_2 (Riboflavin)
B_6 (Pyridoxine)
B_{12} (Cyanocobalamin)
Biotin
C (Ascorbic Acid)
Choline
Folacin
Inositol
Niacin
Pantothenic Acid
Para-aminobenzoic Acid

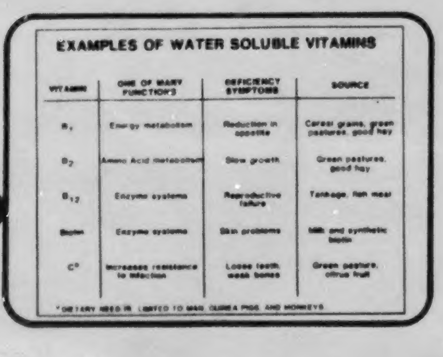
Fat soluble vitamins can be stored in the body. Water soluble vitamins cannot be stored in the body, and therefore must be supplied daily in the feed.



FAT SOLUBLE VITAMINS

Vitamin	One of Many Functions	Deficiency Symptoms	Source
A	Night vision	Night blindness	Green leafy hays, pasture, corn
D	Bone development	Rickets	Direct sunlight, sun cured hay
E	Cell maintenance	Reproductive problems	Green plants and green hay
K	Blood clotting	Hemorrhaging	Green pasture, good hay

Fat soluble vitamins are necessary for many different functions. Examples of deficiency symptoms and sources are given.

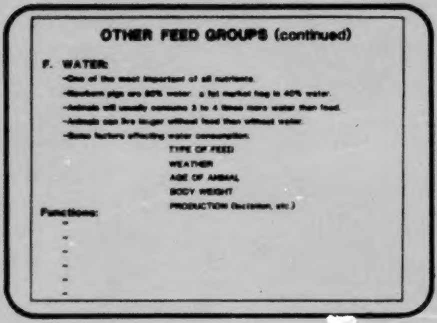


EXAMPLES OF WATER SOLUBLE VITAMINS

VITAMIN	ONE OF MANY FUNCTIONS	DEFICIENCY SYMPTOMS	SOURCE
B_1	Energy metabolism	Reduction in appetite	Cereal grains, green pastures, good hay
B_2	Amino Acid metabolism	Slow growth	Green pastures, good hay
B_{12}	Enzyme systems	Reproductive failure	Tankage, fish meal
Biotin	Enzyme systems	Skin problems	Milk and synthetic biotin
C*	Increases resistance to infection	Loose teeth, weak bones	Green pasture, citrus fruit

*DIETARY NEED IS LIMITED TO MAN, GUINEA PIGS, AND MONKEYS

Water soluble vitamins are also necessary for many different functions. Examples of deficiency symptoms and sources are given.

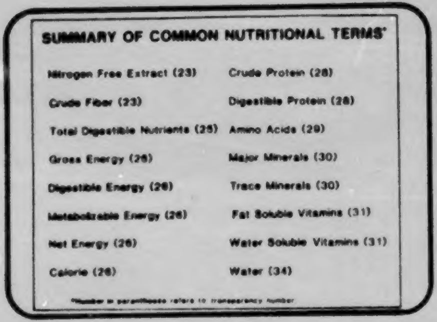


OTHER FEED GROUPS (continued)

F. WATER:
- One of the most important of all nutrients.
- Newborn pigs are 80% water; a fat market hog is 40% water.
- Animals will usually consume 3 to 4 times more water than feed.
- Animals can live longer without feed than without water.
- Some factors affecting water consumption:
  - TYPE OF FEED
  - WEATHER
  - AGE OF ANIMAL
  - BODY WEIGHT
  - PRODUCTION (lactation, etc.)

Functions:
-
-
-
-
-
-

Water serves several important functions in the body:
- Helps regulate water temperature
- Helps transport nutrients in the bloodstream
- An important part of other body fluids
- Helps in digestion, absorption, and metabolism
- Helps maintain cell and body shape
- Helps in elimination of waste products from the body

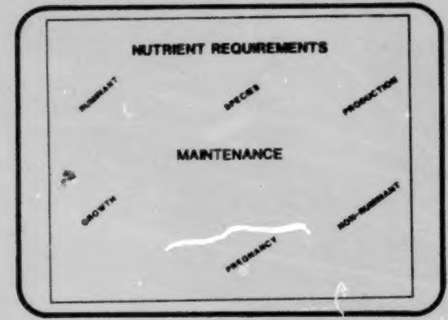


SUMMARY OF COMMON NUTRITIONAL TERMS*

Nitrogen Free Extract (23)	Crude Protein (28)
Crude Fiber (23)	Digestible Protein (28)
Total Digestible Nutrients (25)	Amino Acids (29)
Gross Energy (26)	Major Minerals (30)
Digestible Energy (26)	Trace Minerals (30)
Metabolizable Energy (26)	Fat Soluble Vitamins (31)
Net Energy (26)	Water Soluble Vitamins (31)
Calorie (26)	Water (34)

*Number in parentheses refers to transparency number

Students should be familiar with each of these terms before proceeding.



NUTRIENT REQUIREMENTS

RUMINANT

SPECIES

PRODUCTION

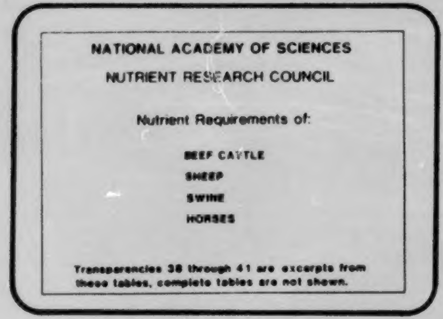
MAINTENANCE

GROWTH

NON-RUMINANT

PREGNANCY

Nutrient requirements are affected by the species, type of digestive system, maintenance, growth, production, pregnancy, etc.



NATIONAL ACADEMY OF SCIENCES

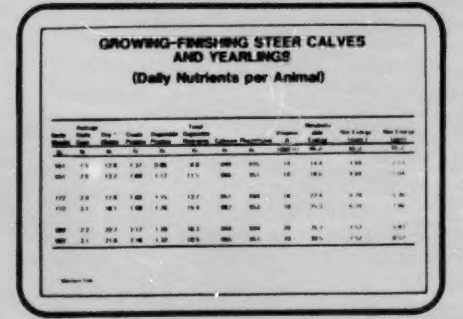
NUTRIENT RESEARCH COUNCIL

Nutrient Requirements of:

BEEF CATTLE
SHEEP
SWINE
HORSES

Transparencies 38 through 41 are excerpts from these tables, complete tables are not shown.

The most up-to-date feeding standards and nutrient requirements are published by the National Research Council of The National Academy of Sciences. In addition to beef cattle, swine, sheep, and horses, they have established requirements for dairy cattle, poultry, rabbits, mink, foxes, trout, catfish, and dogs.



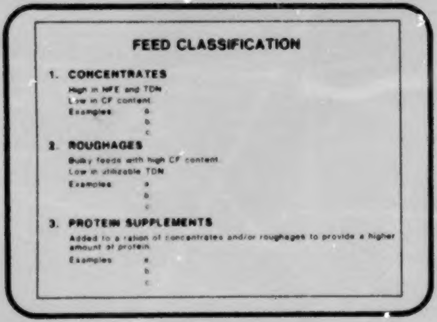
GROWING-FINISHING STEER CALVES AND YEARLINGS

(Daily Nutrients per Animal)

The daily nutrient requirements for growing-finishing steer calves and yearlings, at selected weights and specified daily gains, are shown. How much crude protein is required daily in the ration of a 551 pound steer gaining 2.9 pounds per day? (1.68 lbs.) What are the TDN requirements of a 791 pound steer gaining 2.4 pounds per day? (13.7 lbs. per day).

FEED CLASSIFICATION AND COMPOSITION

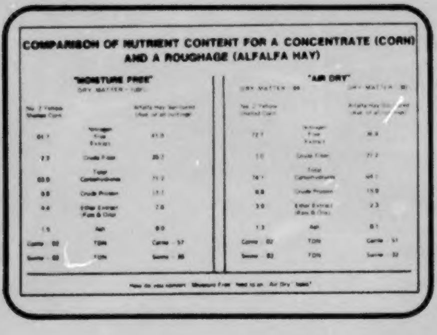
Feedstuffs are often classified as concentrates, roughages, and protein supplements. Knowing the composition of common feedstuffs is essential for balancing rations.



FEED CLASSIFICATION

1. CONCENTRATES
   High in NFE and TDN
   Low in CF content
   Examples a
   b
   c
2. ROUGHAGES
   Bulky feeds with high CF content
   Low in utilizable TDN
   Examples a
   b
   c
3. PROTEIN SUPPLEMENTS
   Added to a ration of concentrates and/or roughages to provide a higher amount of protein
   Examples a
   b
   c

Feedstuffs are broadly classified into concentrates, roughages, and protein supplements. Concentrates include corn, oats, barley, wheat, milo, rye, grain byproducts, etc. Roughages include hay, silage, pasture, stover, etc. Protein supplements include soybean meal, linseed meal, cottonseed meal, tankage, meat and bone scraps, etc.



COMPARISON OF NUTRIENT CONTENT FOR A CONCENTRATE (CORN) AND A ROUGHAGE (ALFALFA HAY)

"MOISTURE FREE"

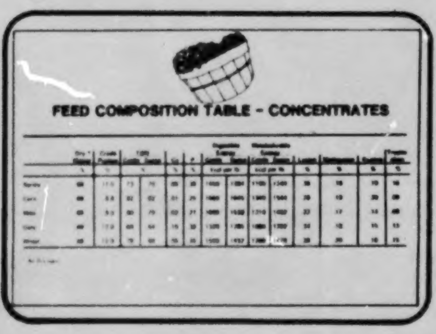
"AIR DRY"

This chart compares a representative concentrate and roughage. Note the higher NFE and TDN values for the concentrate. The roughage has higher C.F. and ASH content. Some feed composition tables give data on a **moisture free** basis (100% DM). It is often desirable to convert these figures to an air dry basis. The following formula will convert components of a moisture free feed to a given air dry basis:

$$\text{\% part in air dry feed} = \frac{\text{\% part in moisture free feed X \% dry matter of feed on air dry basis}}{\text{\% dry matter in moisture free feed}}$$

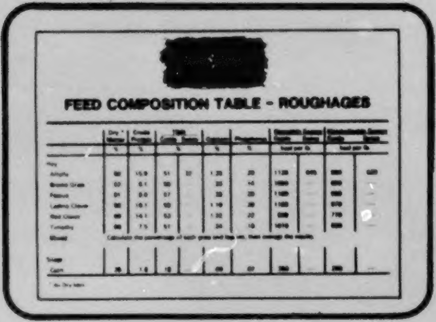
To dertermine % C.P. in 89% dry matter corn when you know the % C.P. in moisture free feed (i.e. 9.9%):

$$\text{\% C.P. in air dry feed} = \frac{9.9 \text{ X } 89}{100} = 8.8$$



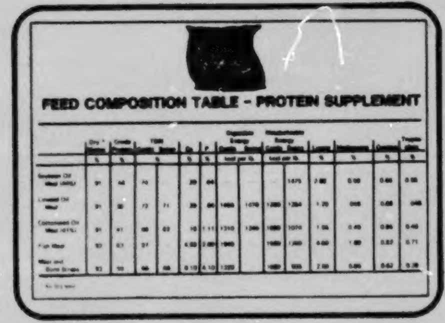
FEED COMPOSITION TABLE – CONCENTRATES

The data given in Feed Composition Table – Concentrates is a combination of information derived from several sources. Data may or may not be exactly the same as that found in other references. Note that the TDN, digestible energy, and metabolizable energy are substantially different for cattle and swine in certain feeds. This is due to the difference in the ruminant and non-ruminant digestive systems. Amino acid content given is important for determining swine rations, but not cattle rations. A Kcal is a kilocalarie and equals 1000 calories.



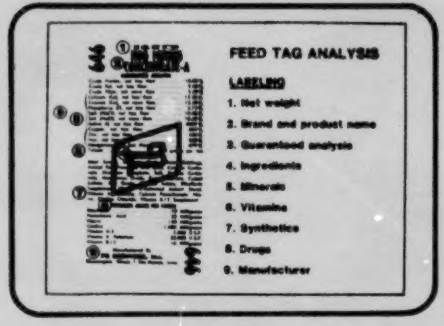
FEED COMPOSITION TABLE - ROUGHAGES

Note that data for TDN, digestible energy, and metabolizable energy are not generally available for swine in the Feed Composition Table – Roughages.



FEED COMPOSITION TABLE - PROTEIN SUPPLEMENT

Soybean meal, linseed meal, and cottonseed meal are plant proteins. Fish meal and meat and bone scraps are animal protein sources.

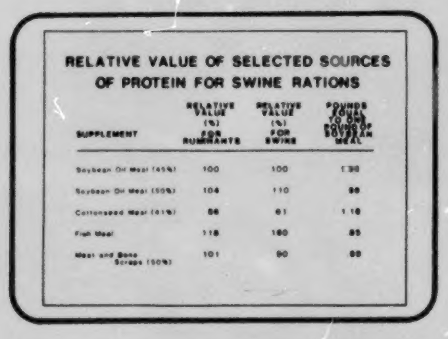


FEED TAG ANALYSIS

LABELING

1. Net weight
2. Brand and product name
3. Guaranteed analysis
4. Ingredients
5. Minerals
6. Vitamins
7. Synthetics
8. Drugs
9. Manufacturer

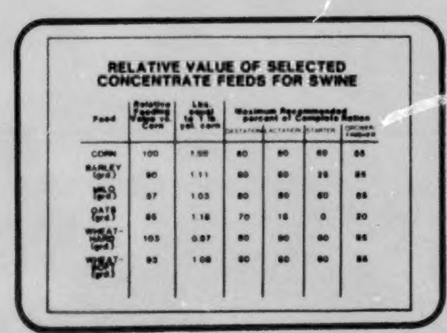
Commercial feed laws regulate the distribution and sale of livestock feed. The tag attached to each bag of feed indicates the ingredients and guaranteed analysis of the feed. A thorough understanding of how to read and interpret the tag is essential in order to properly balance a diet. Guaranteed analysis is the amount of a particular material in a feed.



RELATIVE VALUE OF SELECTED SOURCES OF PROTEIN FOR SWINE RATIONS

SUPPLEMENT	RELATIVE VALUE (%) FOR RUMINANTS	RELATIVE VALUE (%) FOR SWINE	POUNDS EQUAL TO ONE POUND OF SOYBEAN MEAL
Soybean Oil Meal (45%)	100	100	1.00
Soybean Oil Meal (50%)	104	110	.90
Cottonseed Meal (41%)	86	81	1.16
Fish Meal	118	160	.85
Meat and Bone Scraps (50%)	101	90	.90

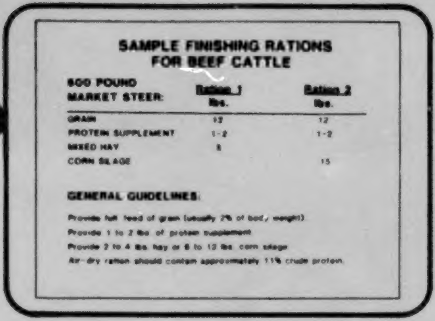
Soybean meal (44-45% CP) is often used as a standard against which the livestock feeder can measure the value of other protein supplements. Some livestock producers live in areas where other protein supplements are readily available. This table along with the current costs of other protein supplement sources may be used to determine the most economic supplement to feed.



RELATIVE VALUE OF SELECTED CONCENTRATE FEEDS FOR SWINE

Feed	Relative Feeding Value vs. Corn	Lbs. equal to 1 lb. gd. corn	Maximum Recommended percent of Complete Ration			
			GESTATION	LACTATION	STARTER	GROWER-FINISHER
CORN	100	1.00	80	80	60	85
BARLEY (grd.)	90	1.11	80	80	25	85
MILO (grd.)	97	1.03	80	80	60	85
OATS (grd.)	85	1.18	70	15	0	20
WHEAT-HARD (grd.)	103	0.97	80	80	60	85
WHEAT-SOFT (grd.)	93	1.08	80	80	60	85

Corn is one of the most common swine feeds. The feeding value of other concentrates can be compared with it. Concentrates should not be fed at more than the maximum recommended percent of the complete ration. Higher levels may decrease performance.



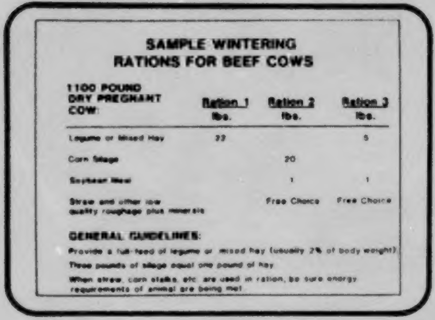
SAMPLE FINISHING RATIONS FOR BEEF CATTLE

800 POUND MARKET STEER:	Ration 1 lbs.	Ration 2 lbs.
GRAIN	12	12
PROTEIN SUPPLEMENT	1-2	1-2
MIXED HAY	5	
CORN SILAGE		15

GENERAL GUIDELINES:

Provide full feed of grain (usually 2% of body weight)
Provide 1 to 2 lbs. of protein supplement
Provide 2 to 4 lbs. hay or 8 to 12 lbs. corn silage
Air-dry ration should contain approximately 11% crude protein.

Sample finishing rations for beef cattle.



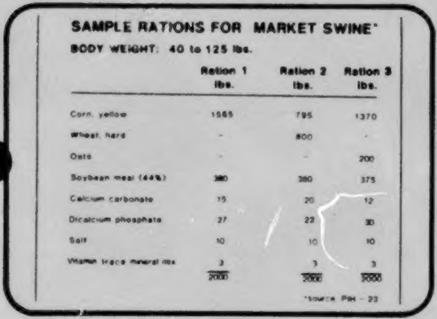
SAMPLE WINTERING RATIONS FOR BEEF COWS

1100 POUND DRY PREGNANT COW:	Ration 1 lbs.	Ration 2 lbs.	Ration 3 lbs.
Legume or Mixed Hay	22		5
Corn Silage		20	
Soybean Meal		1	1
Straw and other low quality roughage plus minerals		Free Choice	Free Choice

GENERAL GUIDELINES:

Provide a full-feed of legume or mixed hay (usually 2% of body weight)
Three pounds of silage equal one pound of hay
When straw, corn stalks, etc. are used in ration, be sure energy requirements of animal are being met.

Sample wintering rations for beef cows.



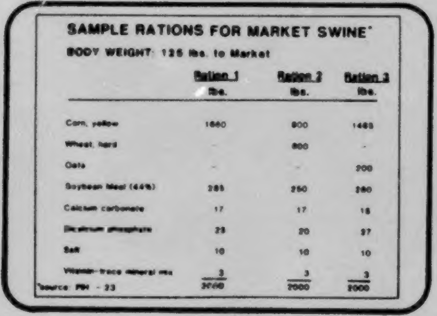
SAMPLE RATIONS FOR MARKET SWINE*

BODY WEIGHT: 40 to 125 lbs.

	Ration 1 lbs.	Ration 2 lbs.	Ration 3 lbs.
Corn, yellow	1565	795	1370
Wheat, hard	-	800	-
Oats	-	-	200
Soybean meal (44%)	380	380	375
Calcium carbonate	15	20	12
Dicalcium phosphate	27	22	30
Salt	10	10	10
Vitamin trace mineral mix	3	3	3
	2000	2000	2000

*source: PIH - 23

Sample rations for market swine weighing 40 to 125 pounds.



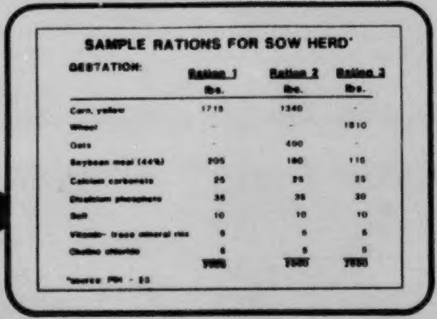
SAMPLE RATIONS FOR MARKET SWINE*

BODY WEIGHT: 125 lbs. to Market

	Ration 1 lbs.	Ration 2 lbs.	Ration 3 lbs.
Corn, yellow	1660	900	1465
Wheat, hard	-	800	-
Oats	-	-	200
Soybean Meal (44%)	285	250	280
Calcium carbonate	17	17	18
Dicalcium phosphate	25	20	27
Salt	10	10	10
Vitamin-trace mineral mix	3	3	3
	2000	2000	2000

*source: PIH - 23

Sample rations for market swine weighing 125 pounds to market weight.

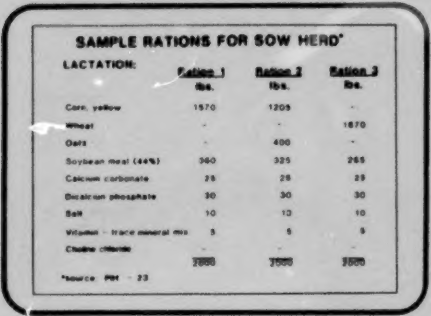


SAMPLE RATIONS FOR SOW HERD*

GESTATION:	Ration 1 lbs.	Ration 2 lbs.	Ration 3 lbs.
Corn, yellow	1715	1340	-
Wheat	-	-	1810
Oats	-	400	-
Soybean meal (44%)	205	180	115
Calcium carbonate	25	25	25
Dicalcium phosphate	35	35	30
Salt	10	10	10
Vitamin- trace mineral mix	5	5	5
Choline chloride	5	5	5
	2000	2000	2000

*source: PIH - 23

Sample rations for the sow herd during gestation.



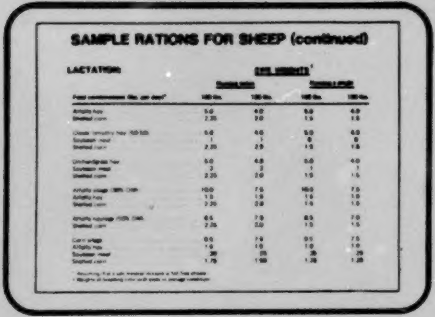
SAMPLE RATIONS FOR SOW HERD*

LACTATION:

	Ration 1 lbs.	Ration 2 lbs.	Ration 3 lbs.
Corn, yellow	1570	1205	-
Wheat	-	-	1670
Oats	-	400	-
Soybean meal (44%)	360	325	265
Calcium carbonate	25	25	25
Dicalcium phosphate	30	30	30
Salt	10	10	10
Vitamin - trace mineral mix	5	5	5
Choline chloride	-	-	-
	2000	2000	2000

*source: PIH - 23

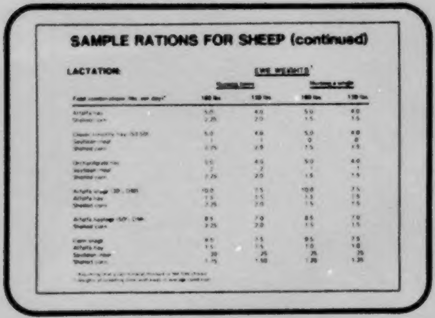
Sample rations for the sow herd during lactation.



SAMPLE RATIONS FOR SHEEP (continued)

LACTATION:

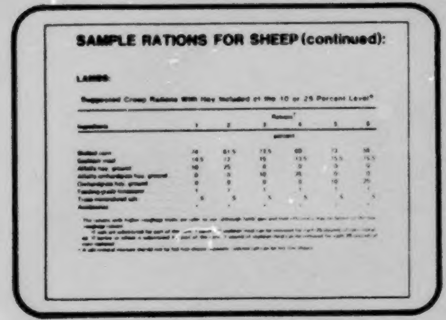
Sample rations for sheep: Gestation.



SAMPLE RATIONS FOR SHEEP (continued)

LACTATION:

Sample rations for sheep: Lactation.



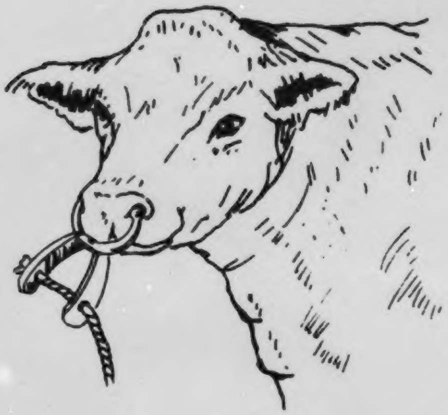
SAMPLE RATIONS FOR SHEEP (continued):

LAMBS:

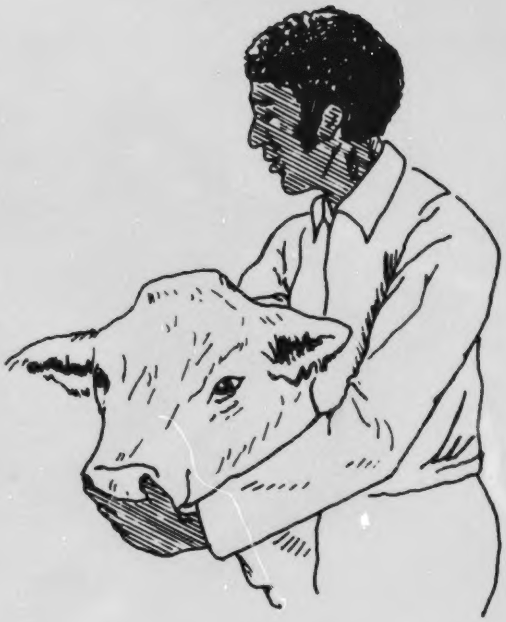
Suggested Creep Rations With Hay Included at the 10 or 25 Percent Level

Sample rations for sheep: Lambs.

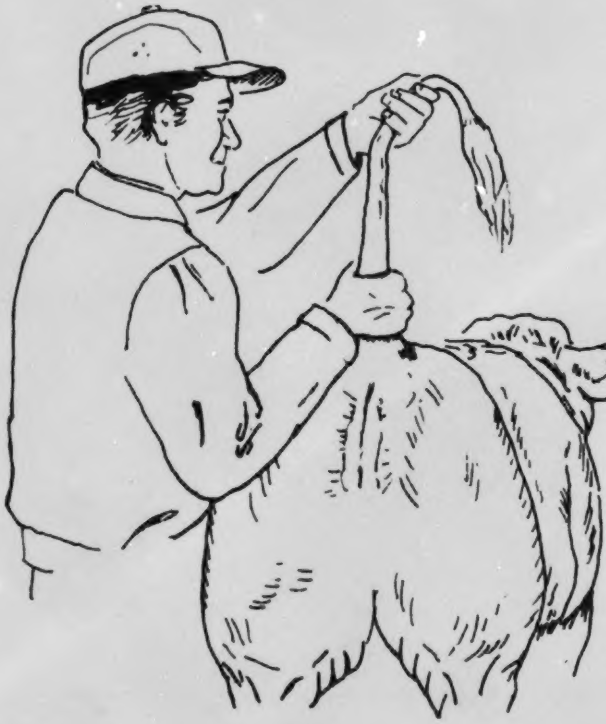
RESTRAINING CATTLE



Using nose leads

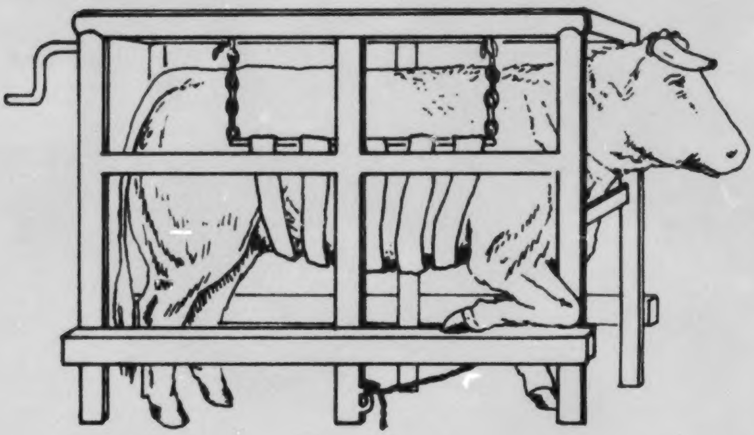


Squeezing the nostrils

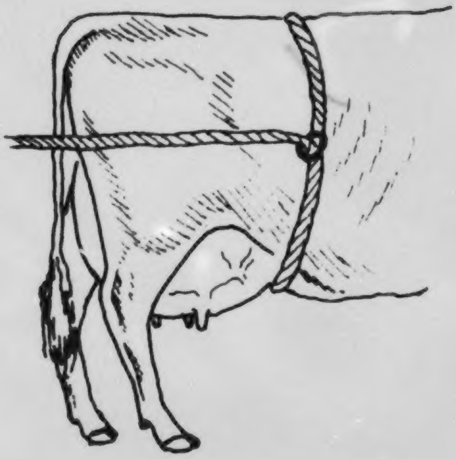


Grasping the tail

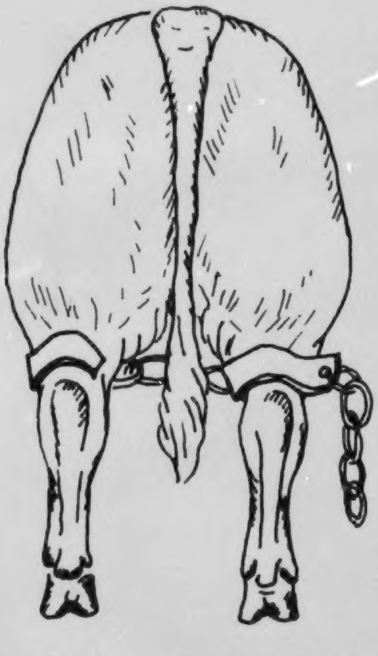
RESTRAINING METHODS WHICH REDUCE KICKING



Use a trimming stock



Apply a rope squeeze restraint



Secure with hobbles

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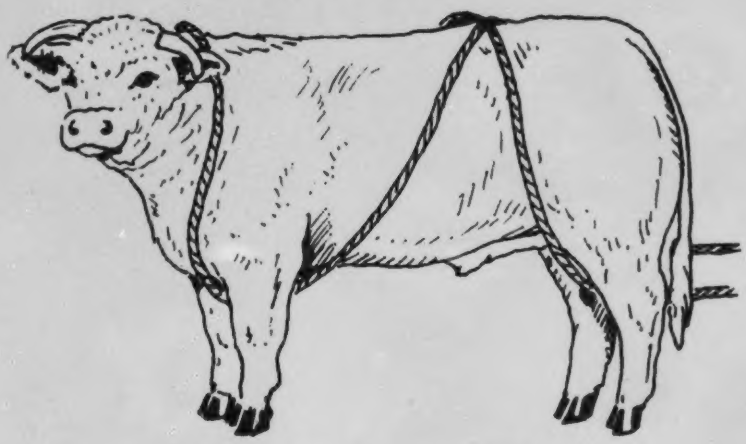
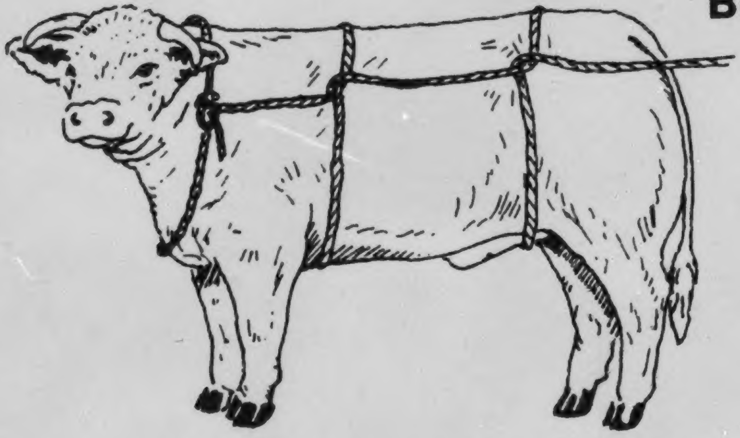
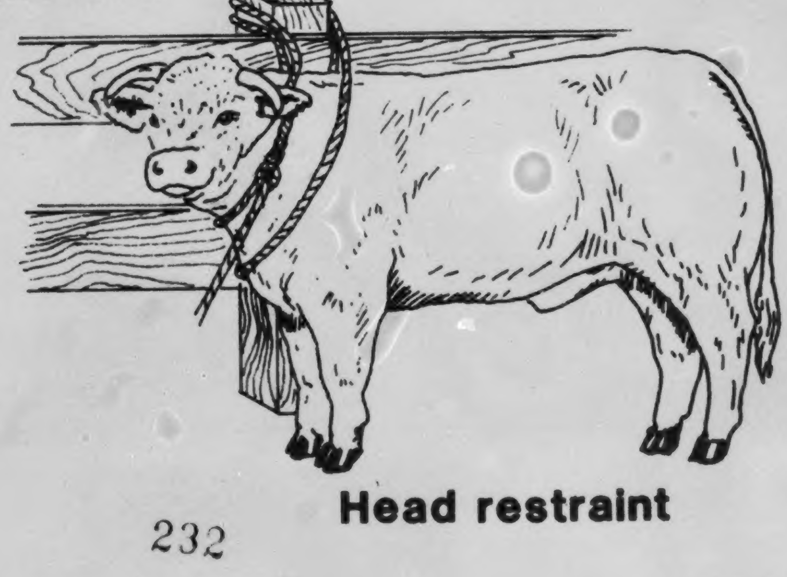
CASTING AND HOLDING CATTLE



Burley method

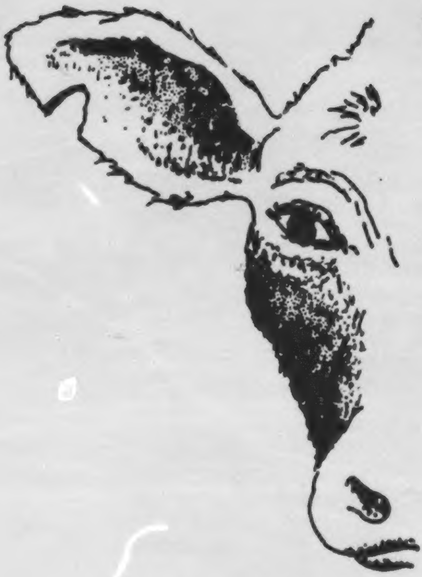


Rope method

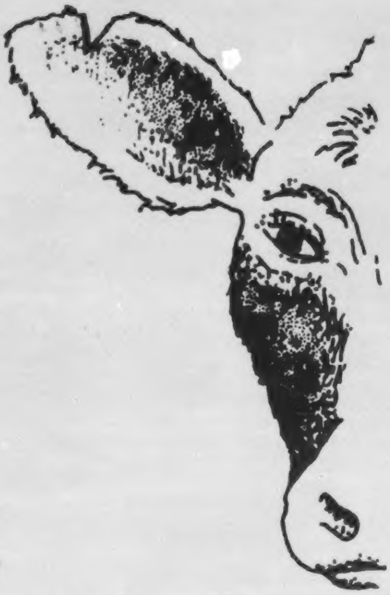


Head restraint

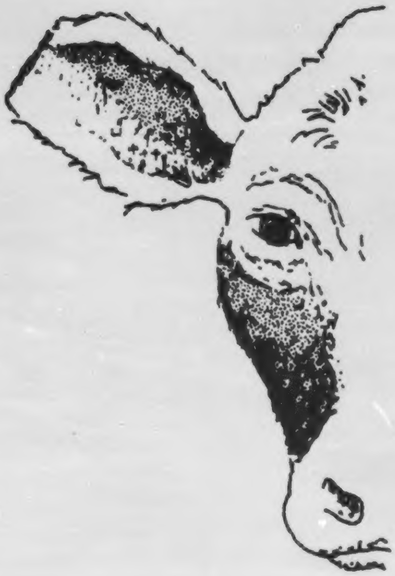
NOTCHING CATTLE EARS FOR IDENTIFICATION



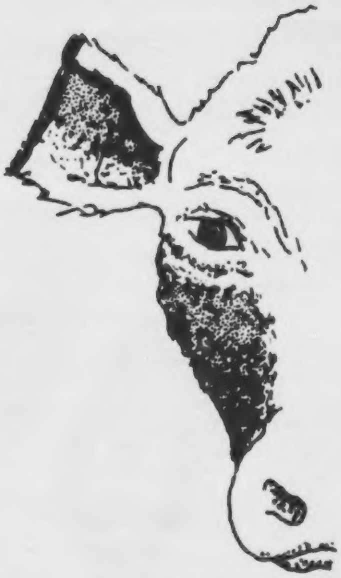
Under bite



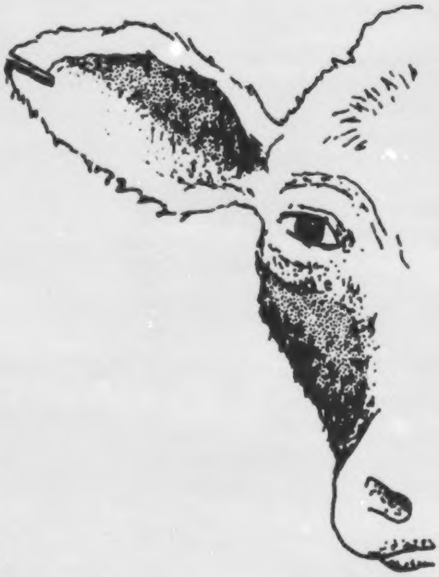
Over bite



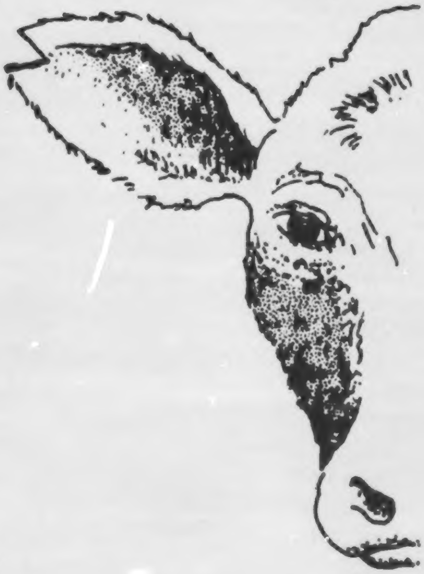
Tipped



Bobbed

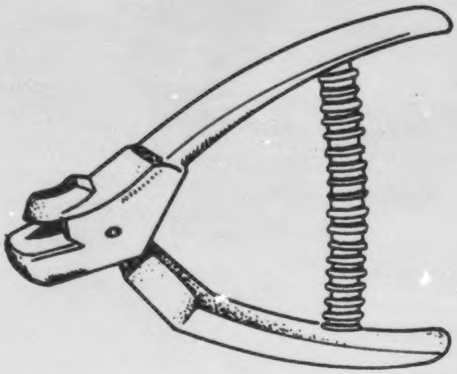


Split

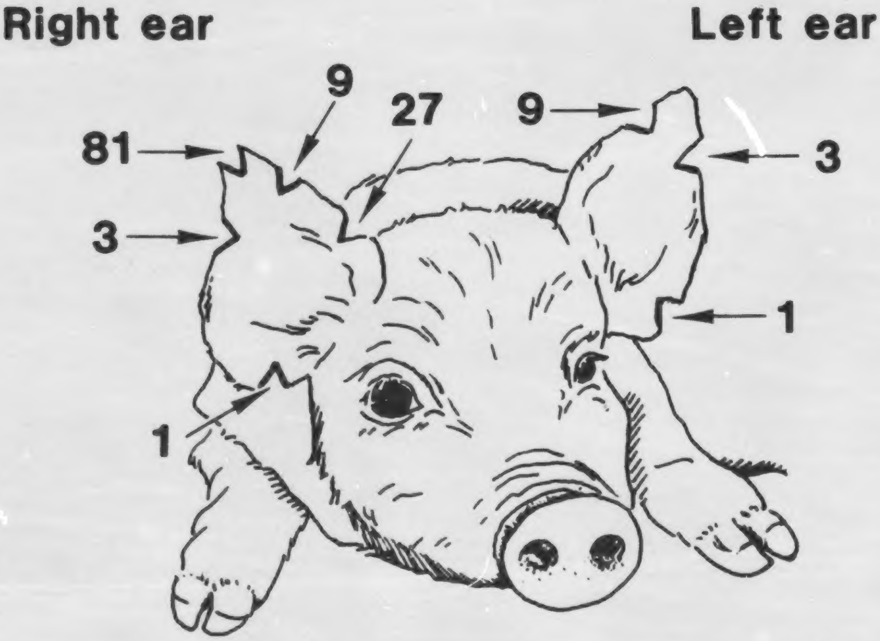


Swallow

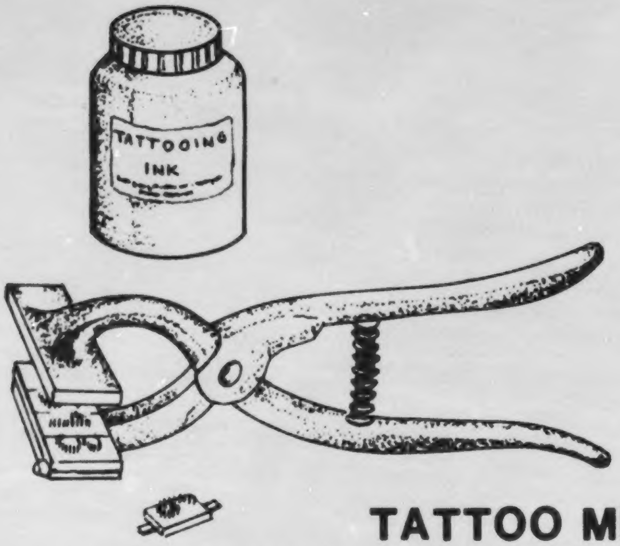
IDENTIFYING SWINE

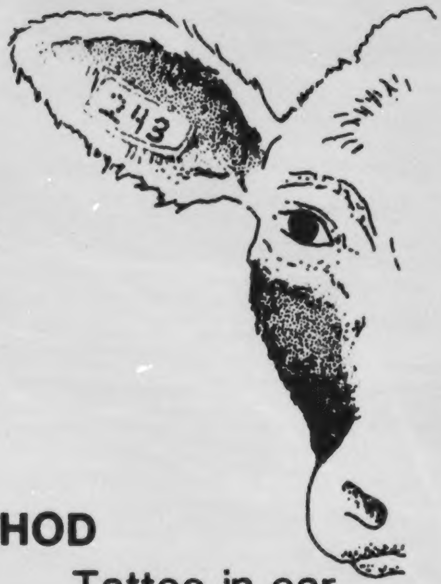


Ear notchers


Right ear
Left ear
81
9
27
3
1
9
3
1

MARKING CATTLE FOR IDENTIFICATION

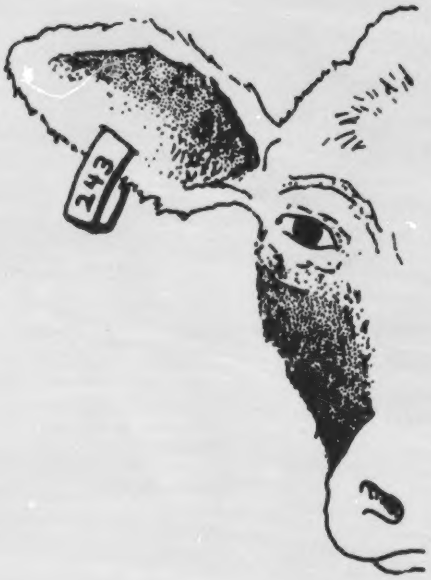

TATTOOING INK

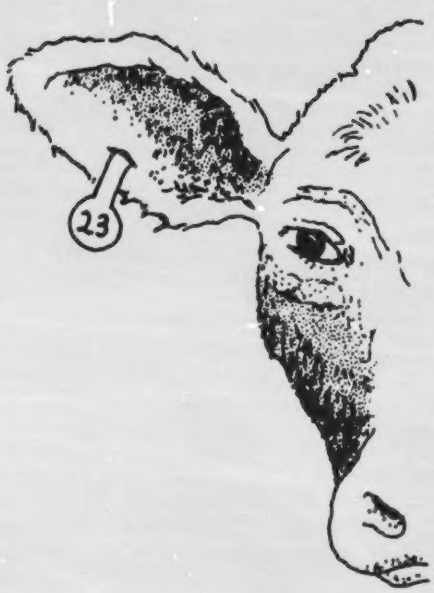


TATTOO METHOD

Tattooing ink and pliers

Tattoo in ear





EAR TAG METHOD

Metal or plastic tag

Rubber tag

TRANSPARENCY DISCUSSION GUIDE

I. Transparency: RESTRAINING CATTLE

A. Discuss the reasons why it is necessary to restrain animals at various times. Some possible reasons for restraining animals would be to castrate, dehorn, mark, medical treatment, prepare for shows and fairs.

B. Explain to the class the factors herdsmen should consider when deciding which restraining method to use with each operation.

1. Available equipment.
2. Available labor.
3. Seriousness of operation.
4. Length of time animal will be restrained.
5. Size and age of animal.
6. Temperment of animal.

C. Nose Leads:

1. Easiest restraining method.
2. Works well for examining body and feet, injections and holding animal
3. Animal concentrates on pain caused by nose leads and forgets about management operation.

D. Tail Restraint:

1. Hold tail near base and apply upward pressure.
2. Works well on nervous cattle.
3. Used when working around the rear quarters of the animal.
4. Always stand at the side of the animal to reduce the chances of being kicked.

E. Grasping Nostrils:

1. Not as effective as nose leads.
2. Works well for holding cows if they are not wild or excited.

II. Transparency: RESTRAINING METHODS WHICH REDUCE KICKING

A. Hobbles -

1. Generally used with diary cows.
2. Animals still have some freedom of movement.

B. Trimming Stock -

  1. Supports weight of animals so the animals feet can be raised for ease of inspection and trimming.
  2. Works satisfactorily for injections.

C. Squeeze Restraint -

  1. Keeps animal from kicking.
  2. Must keep her head secured.
  3. Generally causes the animal to stand quietly.

III. Transparency: CASTING AND HOLDING CATTLE

A. Burley Method.

  1. Use a 40 foot rope.
  2. Place over the neck at the withers and cross under the fore legs.
  3. Bring up and across the back then down and between the rear legs.
  4. The animal will fall by pulling the ends of the rope.
  5. The rope must be kept pulled tightly or the animal's legs secured to keep her down.

B. Rope Casting -

  1. Loop the rope around the animal's neck.
  2. Make two half hitches around the body and pull.
  3. Keep the rope tight to hold the animal down.

IV. Transparency: NOTCHING CATTLE EARS FOR IDENTIFICATION

A. Ear marking cattle, swine, sheep and goats is a common practice for identifying animals

B. Ear marking allows the herdsman to identify the animal from the front or rear. Branding is generally only visible with a side view.

C. Ear marks can be made with a sharp knife and should be recorded by the herdsman in the record book.

V. Transparency: IDENTIFYING SWINE

A. Some breed associations require the breeding stock to be ear notched.

B. The instruments used for ear notching are available in various sizes.

C. Whichever numbering system the producer uses, it should be simple and easily read.

D. Practice marking and reading ear notches using either the system on the transparency or a system which is being used by a student.

E. This system is the one recommended by the Illinois Cooperative Extension Service.

VI. Transparency: MARKING CATTLE FOR IDENTIFICATION

Ear Tagging -

A. Metal or plastic tags are most commonly used to ear tag an animal.

B. The ear tags can be easily and quickly attached by a special instrument and an be easily read at a distance.

C. The tags may be rubbed off by the animals and are not considered a permanent identification method.

Tattooing -

A. Tattooing will permanently identify the animal.

B. A special tattooing instrument is used which has a a series of sharp points shaped into letters or numbers.

C. Indelible ink is placed on the ponts and the tattoo is placed in the inside of the ear of cattle. Rubbing the ink into the perforations will make the tattoo permanent and legible.

D. Horses are tattooed on the inside of the upper lip.

Teacher's Key

TEST QUESTIONS

MANAGING THE BEEF COW HERD

TRUE (+) - FALSE (0)

___+___ 1. Birth weight of the calf is an important factor in ease of calving.

___+___ 2. The commercial cow herd owner needs to be as selective as the purebred breeder.

___+___ 3. Hardiness of the beef cow allows her to take care of herself during much of the year if pastures and crop residues are available for grazing.

___0___ 4. Cows which are fat may be expected to have a high conception rate.

___+___ 5. Beef cows can make good use of low-quality roughages that might otherwise be lost as feed.

___0___ 6. Milo and wheat should be cracked or rolled and should not replace more than 75% of the corn in a creep ration.

___+___ 7. Protein, calcium, and phosphorus requirements are about double for the lactating cow.

___0___ 8. Because of added weight per day of age, bull calves usually bring a premium price.

___+___ 9. Creep feeding is required more often for fall calves than for spring calves.

___+___10. Owning a scale, or having one available, is a must for the progressive cattleman.

MULTIPLE CHOICE (Choose the best answer.)

___B___1. Energy requirements of a cow nursing a calf are about __________ percent higher than that of a wintering dry cow.

A. 30
B. 50
C. 60
D. 75

___D___2. Creep feeding is definitely an advantage except for those who:

A. Sell their calves at weaning time
B. Run out of pasture before weaning
C. Full-feed calves immediately after weaning
D. Plan to rough the calves through the winter

___E___3. A combination of legume roughage with lower quality roughages will meet __________ requirements without the use of a supplement.

A. protein
B. fiber
C. energy
D. A and B
E. A and C

__B__4. Heifer calves that may go into the breeding herd should gain__________pounds per day after weaning.

A. .5 to 1
B. 1 to 1.5
C. 2 to 2.5
D. 2 to 3

__B__5. Research results have shown an additional__________pounds in calf weaning weight when calves were implanted with stilbestrol at three months of age.

A. 1 to 5
B. 15 to 25
C. 20 to 30
D. 50 to 75

__D__6. Breeding during very hot weather often results in:

A. A higher percentage of twin calves
B. A higher percentage of bull calves
C. A higher conception rate
D. A lower conception rate

__C__7. Calf is too large, head bent back, front legs bent back, are all signs of

A. normal birth
B. cow failing to dilate
C. calving difficulty
D. breech birth

__D__8. Calves can be fed economical growing rations to gain 1.5 to 2 pounds per day for about__________days.

A. 60
B. 90
C. 120
D. 150

__B__9. Intensification of the cow-calf program is probably best suited for the__________ region of the U.S.

A. plains
B. cornbelt
C. southeast
D. southwest

__D__10. Under normal Illinois pasture breeding conditions, a mature bull should not run with more than:

A. 10-15 cows
B. 15-20 cows
C. 20-30 cows
D. 25-35 cows

MATCHING (Select the answer from the right column that most accurately fits the item or description in the left column.)

F 1. Easiest crossbreeding program
C 2. Good calving weight
E 3. TDN
B 4. Increase carrying capacity 50-100% over pasture
G 5. Method of castration
H 6. Method of dehorning
D 7. Assures complete removal of testicles
I 8. Weaning weight for steer calves
J 9. Good moisture content for silage
A 10. Should be thoroughly evaluated on a routine basis to obtain maximum benefit

A. Records
B. Drylot
C. 65-70
D. Knife
E. Total Digestable Nutrients
F. Two-breed rotational
G. burdizzo clamp
H. tube, spoon
I. 400-500
J. 55%

COMPLETION (Write appropriate word or words to complete the statements.)

1. Good management is the key to a successful cattle operation.

2. To be profitable, a beef cow herd has to be productive in terms of pounds of calves per cow.

3. Heifers are usually bred to have their first calves when they are about two years old.

4. Heifers calving for the first time are more likely to experience calving difficulty than are mature cows.

5. Herd improvement should be one of the major objectives of the beef producer.

6. Total digestible nutrients of a feed is the sum of all the digestible organic nutrients.

7. Stilbestrol and Ralgro are two kinds of implants for beef cattle.

8. Fescue pastures are commonly used for winter grazing in Southern Illinois.

9. The simple creep rations of grain or grain mixtures are usually adequate for nursing calves.

10. The selection of a herd bull is one of the most important management decisions you will make.

ESSAY QUESTIONS

1. Outline a feeding program for dry, pregnant beef cows for fall and winter to calving time.

Refer to VAS Unit 1010b.

2. Explain a good management (feed and care) program for weaned calves that are to be sold as feeder calves in the fall.

Refer to VAS Unit 1010b.

Teacher's Key

TEST QUESTIONS

SWINE FEEDS AND FEEDING

TRUE (+) - FALSE (0)

+ 1. Gain from growth is primarily in the form of protein tissue and bone.

0 2. Nutrients are the grains, stems, and leaves of the plant that animals use.

+ 3. One of the first things that a ration must do is maintain life.

+ 4. Milk is high in protein, calcium, and phosphorus.

0 5. Oats contain more protein, fiber, and energy content than corn.

+ 6. Only when corn and wheat are nearly the same price per pound that it becomes practical to substitute wheat for corn.

0 7. Ground oats should never be included in the starter ration for weanling pigs.

0 8. Pigs fed ground wheat make slightly better gains than pigs fed corn and require less feed per 100 pounds of gain.

+ 9. More water is required for growing pigs than for mature animals.

+ 10. Milk does not supply an adequate amount of iron and copper for the needs of nursing pigs.

MULTIPLE CHOICE (Mark appropriate choice of A, B, C, or D)

D 1. Nutrients in feeds are:

A. Corn
B. Soybean meal
C. Calcium
D. Water

B 2. A good vegetable protein source for hogs is:

A. Corn that has been finely ground
B. Linseed oil meal
C. Oats that have been soaked overnight
D. Hulless barley

A 3. Wheat is ordinarily:

A. Too high priced to feed to hogs
B. Too fattening to feed to hogs
C. Not very palatable to hogs
D. Ground and soaked for fattening hogs.

__B__ 4. The fattening hogs digestive system requires:

A. A large quantity of roughage
B. Mostly concentrates
C. About half and half concentrates and roughages
D. About three-fourths roughages and one-fourth concentrates

__D__ 5. A mixture of feeds that will provide an animal with the kinds and amounts of nutrients to meet its needs is called:

A. A nutrient
B. A carbohydrate
C. A white-corn ration
D. A balanced ration

__B__ 6. Proteins are needed in a ration for their:

A. Forage content
B. Amino acid content
C. Carbohydrate content
D. Vitamin content

__A__ 7. Pasture crops for growing swine are:

A. Not considered important
B. Important for the first month
C. Important for the first two months
D. Important for summer feeding

__C__ 8. The amount of feed required to produce a 220 pound market pig is about:

A. 220 pounds
B. 660 pounds
C. 900 pounds
D. 1040 pounds

__B__ 9. The producer should not consider farm mixing of swine rations before the volume reaches:

A. 50 tons per year
B. 100 tons per year
C. 150 tons per year
D. 200 tons per year

__A__ 10. Hogs fed a ration deficient in vitamin A will usually:

A. Starve to death in less than a year
B. Get rickets
C. Die with goiter
D. Die with liver necrosis

MATCHING (Select the matching answer from the right column that most accurately fits the item or description in the left column)

E 1. Requires carbohydrates and fats
K 2. Produces heat, energy, and fat
C 3. Is ordinarily too high priced to feed to hogs
H 4. Parts of the feed that animals use
M 5. Deficiency in diet may cause goiter
B 6. Best legume for swine pasture
A 7. Nutrients digested and used by animals
J 8. Protein from animal sources
P 9. Most common grain fed to hogs
F 10. Protein from plant sources

A. Digestible nutrients
B. Alfalfa and ladino clover
C. Wheat
D. Corn stalks
E. Fattening
F. Soybean oil meal
G. Red clover
H. Nutrients
I. Antibiotics
J. Tankage - meat scraps
K. Carbohydrates and fats
L. Rape
M. Iodine
N. Vitamins
O. Oats
P. Corn

COMPLETION (Write the appropriate word or words to complete the statements.)

1. Animals need feed for maintenance, growth, fattening, production, and reproduction.

2. Animals need protein (amino acids), minerals, vitamins, and water for growth.

3. Carbohydrates and fats produce heat, energy, and fat.

4. Grinding or soaking corn usually does not improve it enough to pay for the extra trouble.

5. Wheat is ordinarily too high priced to feed to hogs.

6. Wheat bran is bulky, laxative, and palatable and can be used in a sow's diet just prior to farrowing.

7. Soaking whole barley has been found to be a poor substitute for grinding.

8. Grain sorghum (milo) is not an important hog feed in Illinois.

9. The body of a 225 pound pig contains about five pounds of mineral matter.

10. Lack of iodine in the ration may cause goiter.

ESSAY QUESTIONS

1. List and briefly explain the nutrients that are required for maintenance, growth, fattening, production and reproduction.

   Refer to VAS Unit 1036A.

2. What forages are suitable for hogs?

   Refer to VAS Unit 1036A.

Teacher's Key

TEST QUESTIONS

CARING FOR THE SOW AND LITTER AT FARROWING TIME

TRUE (+) - FALSE (0)

0 1. Installing guard rails or fenders in individual houses or farrowing pens is usually not recommended.

+ 2. A hover may be used to aid in keeping baby pigs warm if the weather is not too cold.

0 3. The sow should be carefully washed and have an insecticide applied at about one month before the end of the gestation period.

0 4. For the first few weeks, orphan pigs should be fed every two hours.

+ 5. After fumigating a building, keep it closed for 24 hours.

+ 6. Farrowing stalls save space and help prevent sows from crushing pigs.

+ 7. Successive farrowing is replacing the spring and fall farrowing seasons.

+ 8. The use of glucose is one way to cure hypoglycemia.

+ 9. Cut off the tails of newborn pigs to prevent tail biting later.

+ 10. Ear notch pigs for identification of the individuals and the litters.

MULTIPLE CHOICE (Make appropriate choice of A, B, C, D, or E)

C 1. The size of the farrowing pen should be:

A. 8 x 8 feet for gilts and 6 x 8 feet for sows
B. 8 x 8 feet for both sows and gilts
C. 6 x 8 feet for gilts and 8 x 8 feet for sows
D. 6 x 8 feet for both sows and gilts
E. none of the above

A 2. Temperature at the floor level of the farrowing unit should be maintained at:

A. 85° to 90° at farrowing, 70° at 3 weeks of age and discontinued at 4 or 5 weeks.
B. 75° to 80° at farrowing, 70° at 3 weeks of age and discontinued at 4 or 5 weeks.
C. 70° to 80° at farrowing, 80° at 3 weeks of age and discontinued at 4 or 5 weeks.
D. 70° to 80° at farrowing, 90° at 3 weeks of age and discontinued at 4 or 5 weeks.

D 3. Soon after the pig is born it should be

A. helped free itself from the enveloping membrane, and start to breath
B. helped to a teat to nurse, if needed
C. dried off at once to prevent chilling
D. all of the above

C 4. Paleness of the skin, thumping of the sides, loss of flesh and roughness of the hair are symptoms of

A. hypoglycemia
B. E. coli bacteria
C. anemia
D. none of the above

A 5. Shivering, dullness, and lack of desire to nurse are symptoms of
A. hypoglycemia
B. E. coli bacteria
C. anemia
D. none of the above

B 6. Using the identification system described in the VAS unit, how many litters of pigs can be identified

A. 146
B. 161
C. 182
D. none of the above

D 7. A farrowing unit may be

A. farrowing house
B. farrowing pen
C. farrowing stall
D. all of the above
E. none of the above

B 8. Using the ear-notching system mentioned in the VAS unit, a single notch in the bottom edge near the tip of the left ear is

A. 1
B. 3
C. 9
D. none of the above

A 9. A sow will usually accept pigs if

A. all the pigs to be left with one sow are put into a tub or box for about an hour
B. all the pigs to be left with one sow are washed with cold water
C. all the pigs to be left with one sow are given an injection of iron
D. all the pigs to be left with one sow are of a similar color

A 10. Pigs with hypoglycemia should respond positively to

A. an injection of 5 to 10cc of 10 to 40 percent glucose
B. 1 to 2 teaspoons sugar diluted with enough water to be fed with a spoon
C. A or B repeated every hour until pig weighs 10 pounds
D. A and B but not C

MATCHING (Select the answer that fits the situation best.)

I 1. Farrowing
F 2. Needle Teeth
A 3. Anemia
B 4. 6 x 8 feet
C 5. Farrwoing Unit
J 6. Fumigation
E 7. Navel
G 8. Glucose
H 9. Ear marking
D 10. Artifical Milk

A. lack of iron
B. size of farrowing stall for gilts
C. clean comfortable quarters
D. aid in saving orphaned pigs
E. use iodine solution
F. clip off tips
G. hypoglycemia
H. means of identification
I. critical period in swine production
J. formaldehyde-potassium permanganate

COMPLETION (Write the appropriate word or words to complete the statements.)

1. The farrowing unit may be a farrowing house, stall or pen.

2. To aid in cleaning, a high pressure sprayer or steam cleaner should be used.

3. When farrowing, if a pig lodges at the pelvic bones it will die in 30 to 60 minutes.

4. Soon after birth the navel should be dipped in iodine solution.

5. The needle teeth or temporary tusks of a baby pig should be clipped with small nippers.

6. An injection of iron-dextran is a good prevention of anemia.

7. Do not, under any circumstances, let baby pigs become chilled.

8. At about 1 week (days, weeds, months etc.) after she farrows, have the sow back on full feed.

9. Even up litters by transferring the strongest pigs from large litters to small litters.

10. Farrowing stalls are usually about five feet wide and seven to eight feet long. The space for the sow is usually 2 feet wide.

ESSAY QUESTIONS

1. Explain different methods of heating the farrowing pen or stall for newborn pigs.

Refer to VAS Unit 1037B.

2. How do you teach an orphan pig to drink?

Refer to VAS Unit 1037B.

TEACHER'S KEY

FEEDING AND MANAGING

SHEEP AND LAMBS

True (+) False (0)

F 1. Sheep are poorly suited to grazing on rangeland and pasture.

T 2. Sheep are ruminants and have a digestive system similar to cattle.

T 3. Poor nutrition can result in loss of vigor and strength in rams.

F 4. It is not necessary to supplement the diet of fall-lambing ewes if they are on good pasture.

T 5. Lactation places a greater nutritional demand on the ewe than pregnancy.

T 6. Pregnant ewes should have plenty of exercise.

T 7. Pregnancy disease commonly occurs a few weeks before lambing.

T 8. Male lambs have a higher death rate than female lambs.

F 9. The lamb tail should be cut off as close to the body as possible.

T 10. It is usually recommended that antibiotics be included in the creep ration.

Multiple Choice (Make appropriate choice of A, B, C or D)

D 1. The proper age to wean lambs depend on:

A. availability of grain
B. market price
C. parasite problems
D. all the above

B 2. Most lambs, in the Midwest, are weaned between the ages of:

A. 1-2 months
B. 2-4 months
C. 5-7 months
D. all the above

B 2. Most lambs, in the Midwest, are weaned between the ages of:

A. 1-2 months
B. 2-4 months
C. 5-7 months
D. 9-11 months

B 3. The percentage of crude protein in a creep ration should be:

A. 5-7%
B. 15-6%
C. 30-32%
D. 50-52%

D 4. Which is not an excellent cereal grain for feeding sheep?

A. barley
B. corn
C. oats
D. soybeans

B 5. The average length of gestation for ewes is:

A. 114-115 days
B. 147-148 days
C. 163-164 days
D. 181-182 days

A 6. The age at which lambs should be docked is:

A. 3-10 days
B. 12-20 days
C. 23-30 days
D. 33-40 days

D 7. Two important minerals for bone formation are:

A. copper and calcium
B. iron and zinc
C. iron and phosphorus
D. phosphorus and calcium

A 8. An example of a good roughage for sheep is:

A. alfalfa hay
B. limestone
C. shelled corn
D. soybean meal

A 9. Aureomycin and terramycin are two most common sources of:

A, antibiotics
B. carbohydrates
C. minerals
D. protein

D 10. Urea is most effectively used as a replacement for_____ in the lamb ration.

A. antibiotics
B. carbohydrates
C. minerals
D. proteins

Matching

G	1.	entertoxemia	A.	Feeding ewes for rapid gaining 10-14 days before breeding.
B	2.	coumestrol	B.	A plant estrogen that can cause delayed conception.
I	3.	ketosis	C.	An important feed nutrient or group .
J	4.	crutching	D.	Udder-infection
H	5.	joint disease	E.	The first milk the ewe produces after lambing.
D	6.	mastitis	F.	Removing lambs tails
A	7.	flushing	G.	Overeating disease
F	8.	docking	H.	Navel ill
C	9.	minerals	I.	Pregnancy disease
E	10.	colostrum	J.	Shearing around the udder, between the legs and around the dock

Completion (Write appropriate information or words to complete statements)

1. The key to an efficient and highly profitable sheep enterprise is good management.

2. The feeding program for the ewe flock should take advantage of the ewes ability to efficiently use large amount of roughage and pasture.

3. Two of the most critical periods of the year, so far as nutrition is concerned, are late pregnancy and early lactation.

4. Usually a ewe should gain from 0 to 30 pounds during pregnancy.

5. Four main causes of new-born lamb deaths are weak-lambs, starvation, stillbirths, and pneumonia.

6. Providing supplemental feed for lambs during the nursing period is known as creep feeding.

7. Shelled corn is a good source of carbohydrates.

8. Antibodies help lambs resist infections.

9. Ewes with twins produce about 50 percent more milk than comparable ewes with singles.

10. A good disinfectant to use on the navel cord is tincture of iodine.

1. Briefly discuss the cause and treatment of pregnancy disease.

   (refer to VAS Unit 1060, Part 3)

2. Briefly describe some causes as to why ewes fail to claim their offspring and some possible methods which could help them to claim a disowned lamb.

   (refer to VAS Unit 1060, Part 4)

UNIT D: LIVESTOCK SCIENCE

PROBLEM AREA: PROVIDING HOUSING AND EQUIPMENT FOR LIVESTOCK

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth-grade or second-year students enrolled in an agricultural occupations program. The recommended time for teaching this problem area is during the winter months. The estimated time for teaching this problem area is 5 to 7 days depending on how much time the teacher wishes to spend on discussion and conducting the suggested exercises. The materials in this problem area were selected and written with the following assumptions:

1. It is important for students to receive instruction in how to plan and use livestock handling facilities.
2. Students should be able to evaluate their own facilities and plan a livestock S.O.E. program.

The instructor is encouraged to conduct a local search to locate other supplementary materials. The items in this problem area are for reference or modification as the teacher adapts this material to his/her local situation.

CREDIT SOURCES:

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The teacher's guide, worksheets, job sheets and sample test questions were developed by Jerry Pepple, Department of Vocational and Technical Education, University of Illinois. The slidefilms were prepared by Vocational Agriculture Service, University of Illinois.

The Beef, Swine and Sheep Handbooks on Housing and Equipment were developed by Midwest Plan Service, Iowa State University, Ames, Iowa.

Suggestions and guidance in the development of these materials were provided by the Rural Core Curriculum Pilot Test Teachers.

TEACHER'S GUIDE

I. Unit: Livestock science

II. Problem area: Providing housing and equipment for livestock

III. Objectives: At the close of this problem area, the students will be able to:

1. Plan an efficient livestock handling facility using an example farm.
2. Describe the necessary livestock equipment handling facilities for a beef, swine or sheep enterprise.
3. Explain the benefits of various types of livestock handling systems.
4. Identify examples of various types of livestock handling facilities and equipment.
5. Determine space requirements for livestock in selected stages of production.
6. Identify the necessary factors which should be considered in planning and constructing livestock equipment.
7. Plan and construct a livestock handling facility for an S.O.E. project.

IV. Suggested interest approaches:

1. Review students' experiences in handling livestock and the kinds of equipment they used or watched someone else use. Develop a list of the equipment the students named.
2. Have students prepare a bulletin board displaying the various items of equipment and facilities the students feel are necessary to properly care for and manage livestock.
3. Plan a field trip to one or more farms to identify the types of facilities used in the community to handle and care for livestock.
4. Prepare and show a set of slides of various pieces of livestock handling equipment and have students identify the pictures and discuss when and how each is used.

V. Anticipated problems and concerns of students:

1. What are the common types of beef operations? Swine? Sheep?

2. What factors should I consider when planning a livestock handling facility?

3. What things need to be considered when finding a location for the facilities?

4. What types of barn systems are used for beef? Swine? Sheep?

5. What space requirements are needed for beef? Swine? Sheep?

6. What are the current regulations affecting livestock waste management?

7. What are some methods of collecting livestock waste?

8. What are ways to store livestock waste?

9. How can livestock waste be utilized?

10. How can I determine which type of livestock facility I should own?

11. What materials are generally used in constructing livestock facilities?

12. What is the minimum equipment necessary for proper care of a beef enterprise? Swine? Sheep?

13. What skills are necessary for me to be able to construct a project for livestock handling?

VI. Suggested learning activities and experiences:

1. Begin the instructional phase of this area with the following steps:

   a. Conduct an interest approach.
   b. Assist students in the identification of goals and objectives.
   c. Have students identify their problems and concerns.

2. Select and group those problems and concerns according to the livestock specie, where necessary, if they are not of a general nature. Have students answer those problems of a general nature first through class discussion and from information supplied through the teacher. Then consider those problems which deal specifically with a certain livestock specie, letting the class decide which specie and the order in which the questions should be discussed. Use the following instructional aids:

    a. VAS Unit 1059, "Livestock Waste Management"

    b. VAS Slide set or Slidefilm 187 and Study Guide, "Beef Handling Facilities"

    c. Beef Handbook, "Housing and Equipment"

    d. Swine Handbook, "Housing and Equipment"

    e. Sheep Handbook, "Housing and Equipment"

3. Divide the students into three or more groups and assign each group to a beef, swine or sheep enterprise. Then assign each group the task of preparing a pictorial display of the minimum equipment every producer would need to have access to or own.

4. Study VAS Unit 1059, "Livestock Waste Management", and discuss the information concerning waste disposal and the laws affecting the various systems used for disposing of livestock waste.

5. Plan and conduct a field trip to area facilities and complete survey information noting the types of systems, buildings and equipment on the various farms.

6. Hand out Worksheet, "Planning Livestock Handling Facilities" and have students complete and turn in for evaluation.

7. Select an area or student's farm and have students re-design the facilities into pre-selected type of operation for beef, swine or sheep.

8. Handout Job Sheet, "Constructing Livestock Handling Equipment," and have students select an item of equipment to repair or build in the shop. Use VAS Unit 3051, "Planning a Woodworking Project," as a reference on how to construct project drawings, figure a bill of materials, and estimate costs. Use VAS Unit 3052, "Selecting and Using Fasteners and Hardware," as a supplemental reference.

9. Construct creep feeders or other items of small livestock equipment and use this as a fund raising and community service activity.

10. Arrange for a resource speaker to address the class on livestock waste management and/or planning livestock handling facilities.

11. Show and discuss VAS slidefilm 187, "Beef Handling Facilities" and discuss how the suggestions in the filmstrip relate to area facilities.

VII. Application procedures:

1. After the students have solved their basic problems and concerns, and become familiar with the types of livestock handling facilities, the students should be able to evaluate their own facilities and design an efficient livestock S.O.E.P.
2. The students should be able to evaluate their own S.O.E.P. in relation to regulations concerning livestock waste management.
3. The students should be able to repair or plan and construct livestock handling equipment which would improve their livestock S.O.E.P.

VIII. Evaluation:

1. Evaluate and grade worksheets and job sheets.
2. Evaluate and grade students' reports on planning livestock handling facilities.
3. Have students repair or build an item of livestock handling equipment and evaluate their work habits and the finished project.
4. Administer and evaluate a test on livestock handling facilities using sample test questions included in this problem area.

IX. References and aids:

1. VAS Unit 1059, "Livestock Waste Management," Vocational Agriculture Service, University of Illinois.
2. VAS Slidefilm 187, "Cattle Handling Facilities," Vocational Agriculture Service, University of Illinois.
3. The following are available from:

   Cooperative Extension Service
   202 Agriculture Engineering
   University of Illinois
   1208 West Peabody Drive
   Urbana, IL 61801

   a. "Beef Handbook, Housing and Equipment," $2.50
   b. "Swine Handbook, Housing and Equipment," $2.50
   c. "Sheep Handbook, Housing and Equipment," $3.00

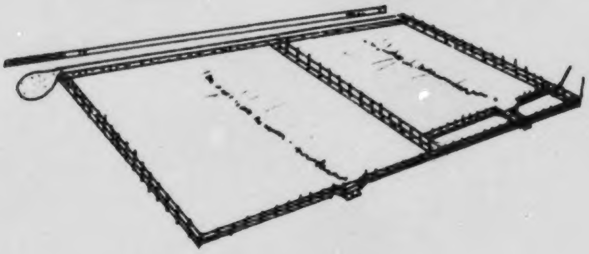
STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

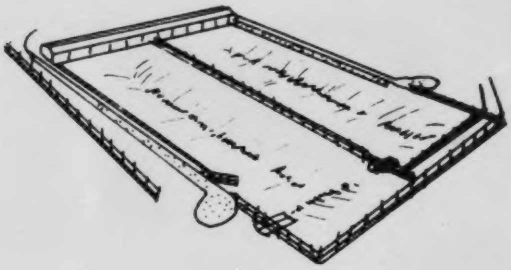
A. Beef Handling Facilities

1. Identify the type of beef operation

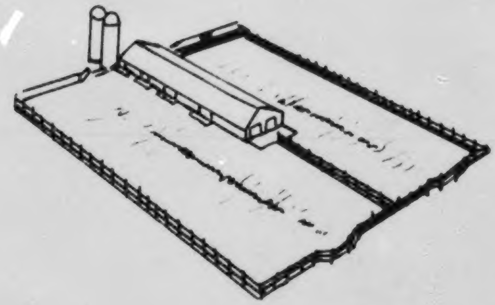
A.



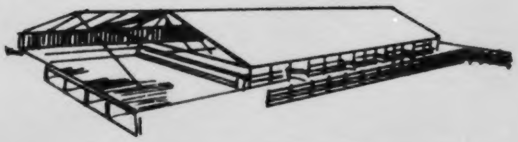
B.



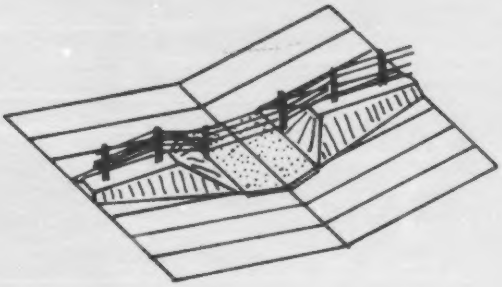
C.



D.



2. Why are the fences and alleys placed on small mounds as shown in the drawing?



____

3. What factors do you need to consider when deciding on the type of beef facility to construct?

   a.

   b.

   c.

   d.

   e.

   f.

4. When planning a location for the beef facilities, what four factors need to be considered?

   a.
   b.
   c.
   d.

5. Identify the space requirements for beef in the following lot types and condition:

Lot type and condition	Sq ft/head
A. Lot unsurfaced except around waterers, along bunks and open-front buildings, and a connecting strip between them.	
B. Lot surfaced, no shelter	
C. Lot surfaced, cattle have free access to shelter	

6. What is the recommended building space for the following beef animals?

	sq. feet
A. Calves to 600 lbs.	
B. Feeders 600 lbs. to market	

7. What are the advantages of having the feed bunk inside a building?

   A.

   B.

   C.

   D.

8. Complete the chart to compare manure handling systems.

Item	Solid Manure	Liquid-Pit	Oxidation ditch	Flushing gutter
Odor				
Fertilizer				
Retention				
Labor required				
Construction cost				
Operation cost				
Maintenance				

9. What special facilities must be available for sick animals?

   A.

   B.

10. Identify four purposes of ventilation in livestock buildings.

    A.

    B.

    C.

    D.

11. What are some reasons ventilation and/or moisture problems occur in cold buildings?

    A.

    B.

    C.

    D.

    E.

12. List some advantages of providing night lighting in beef feedlots

    A.

    B.

    C.

    D.

    E.

    F.

    G.

13. What are the primary reasons for building cattle handling facilities?

    A.

    B.

    C.

    D.

14. What seven functions should a complete organized cattle handling system provide?

A.

B.

C.

D.

E.

F.

G.

15. Plan and diagram a cattle handling facility for 50 head. Consider the following:

A. Type of operation
B. General feeding system
C. Cow-calf or feeder operation
D. Waste disposal system

STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

B. Swine Handling Facilities

1. Deciding on the type of swine production involves the consideration of many factors. When would you recommend?

   A. Farrowing pigs for sale as feeder pigs

   (1)

   (2)

   (3)
   (4)
   (5)

   B. Farrowing pigs for sale as market hogs

   (1)

   (2)

   (3)
   (4)
   (5)

   C. Buying and finishing feeder pigs

   (1)
   (2)
   (3)

2. Under which conditions would you recommend pasture management?

   (1)

   (2)

   (3)
   (4)
   (5)

3. When would you recommend confinement systems?

   (1)
   (2)
   (3)
   (4)
   (5)

Producers raising hogs in confinement:
(6)

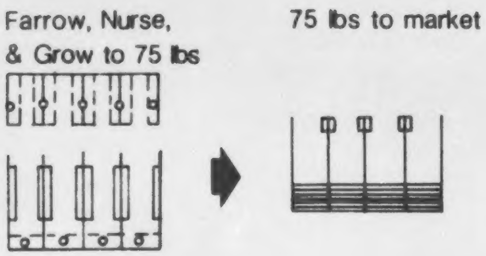
(7)

(8)

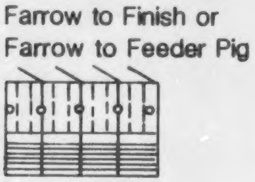
(9)

4. Identify the type of production system as either a one-stage, two-stage, or three-stage system.

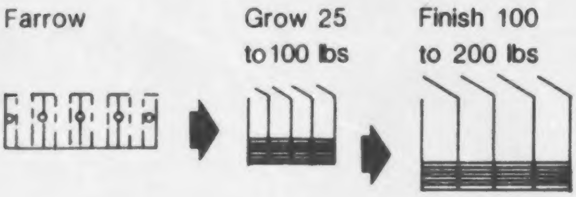
A. ________


Farrow, Nurse,
& Grow to 75 lbs
75 lbs to market

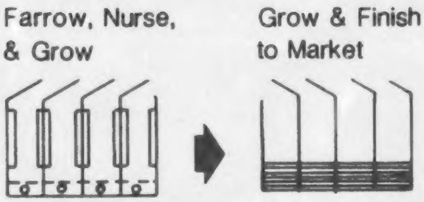
B. ________


Farrow to Finish or
Farrow to Feeder Pig

C. ________


Farrow
Grow 25
to 100 lbs
Finish 100
to 200 lbs

D. ________


Farrow, Nurse,
& Grow
Grow & Finish
to Market

5. List some advantages and disadvantages of free stall farrowing:

The advantages are:

The disadvantages are:

6. Identify the space requirements for the following:

sq. ft. space/head

A. Finishing, more than 150 lbs. __________

B. Growing, weaning to 100 lbs. __________

C. Gestating Sow, bedded area __________

D. Shade, sow and litter __________

E. Shade, pigs over 100 lbs. __________

7. Plan and diagram a swine handling facility for 50 head. Consider the following:

A. Product to be marketed
B. Pasture or confinement
C. Building system
D. Litters to be farrowed /year
E. Waste disposal

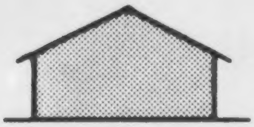
STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

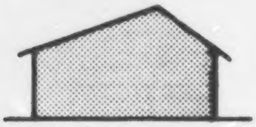
C. Sheep Handling Facilities

1. Identify the barn style below and explain when each is used.

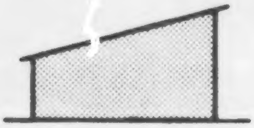
A. ____________



B. ____________



C. ____________



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2. What major items need to be considered when planning a sheep operation?

A.

B.

C.

D.

E.

F.

3. What factors need to be considered when considering a site location?

   A.

   B.

   C.

4. List some practices to follow which can control and minimize waste runoff in open lots.

   A.

   B.

   C.

   D.

   E.

   F.

5. Identify the following space requirements:

Feeder space	Required space/ewe
Group-fed	"
Shelter space	sq. ft.
Lot	sq. ft.
Floor Space	
Solid	sq. ft.
Slotted	sq. ft.

6. Design and diagram a sheep handling facility for 50 head. Consider the following:

   A. Size of operation
   B. Housing system
   C. Building needs and location
   D. Feeding system
   E. Waste management system

STUDENT JOB SHEET

CONSTRUCTING LIVESTOCK HANDLING EQUIPMENT

Objectives:

a. To understand the types of equipment used in livestock handling.
b. To develop the necessary skills to plan and construct livestock handling equipment.
c. To develop the ability to complete a bill of materials and cost for constructing livestock handling equipment.

Materials:

a. Project plans or select one of the attached plans.
b. Building materials and hardware items.
c. Woodworking tools.

Procedures:

a. Develop a project plan - Drawing a picture

   1. Cutting list
   2. Bill of materials
   3. Construction procedure

b. Construct the project using approved shop practices. (refer to the following for additional references: VAS Unit 3051, "Planning a Woodworking Project"; VAS Unit 3052, "Selecting an Using Fasteners and Hardware;" VAS Unit 3053, "Constructing a Woodworking Project."

Questions:

a. What specie of livestock will be used with this project?_____

____

b. What is the main function of this project? ______________

____

c. How will this project make your livestock S.O.E.P. more efficent?

____

____

Observations:

Problem Area (project) ____

A. Job skill performed today: Circle One

1. ____________________________________ individual or group
2. ____________________________________ individual or group
3. ____________________________________ individual or group

B. Difficulties encountered today:

1. ____________________________________ unsolved or solved
2. ____________________________________ unsolved or solved
3. ____________________________________ unsolved or solved

C. Plans for tomorrow:

1. ____________________________________
2. ____________________________________

D. Today, I feel I earned the following grade:

Circle one - A B C D F

Conclusions:

A. What do you like about your finished project? ________________

____

____

B. How could you have done a better job? ________________________

____

____

C. What would you change if you were going to make another project like this one? ________________________________

____

D. What grade do you feel you deserve for this project? ____________

TEACHER'S KEY

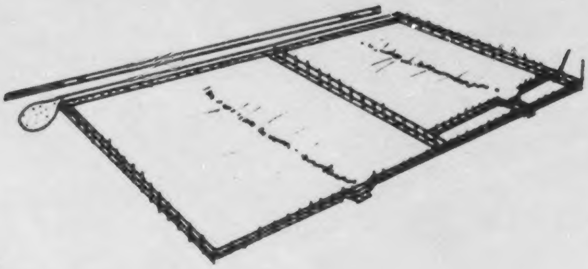
STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

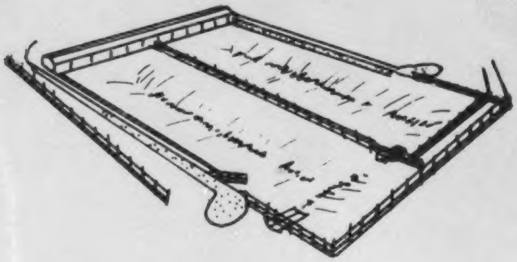
A. Beef Handling Facilities

1. Identify the type of beef operation

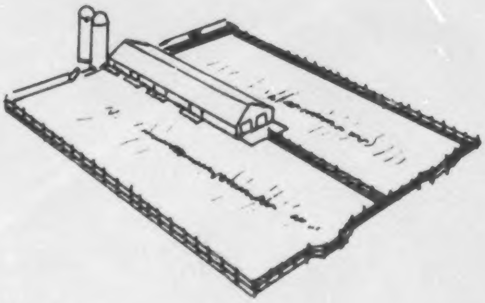
A. Open feedlot



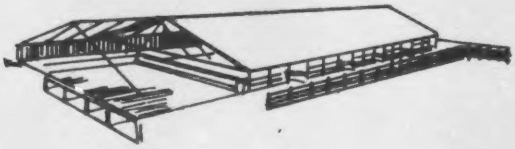
B. Barn and Feedlot



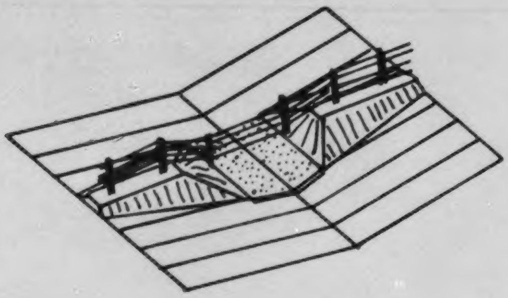
C. Feeding Barn and Lot



D. Confinement Barn



2. Why are the fences and alleys placed on small mounds as shown in the drawing?



A concrete pad prevents mud and reduces erosion where a drainage swale must cross the mound.

3. What factors do you need to consider when deciding on the type of beef facility to construct?

   a. How new facilities will blend with existing facilities.

   b. How much land each system requires, and the type of land available.

   c. How much investment and labor are required.

   d. How wind, rain, snow and temperature can affect location, construction, operation, and rates of gain and feed conversion.

   e. How easily state and federal pollution standards can be met.

   f. Personal preference and management ability.

4. When planning a location for the beef facilities, what four factors need to be considered?

   a. Dust and odor
   b. Runoff
   c. Waste disposal
   d. Roads

5. Identify the space requirements for beef in the following lot types and condition:

Lot type and condition	Sq ft/head
A. Lot unsurfaced except around waterers, along bunks and open-front buildings, and a connecting strip between them.	150-800
B. Lot surfaced, no shelter	50
C. Lot surfaced, cattle have free access to shelter	20 in barn and 30 in lot

6. What is the recommended building space for the following beef animals?

	sq. feet
A. Calves to 600 lbs.	15-20
B. Feeders 600 lbs. to market	20-25

7. What are the advantages of having the feed bunk inside a building?

   A. Feed is prevented from blowing from the bunks.

   B. Feed and equipment are protected from rain and snow.

   C. Cattle eat better during severe weather.

   D. Cattle can use building for summer shade and winter storms.

8. Complete the chart to compare manure handling systems.

Item	Solid manure	Liquid-Pit	Oxidation ditch	Flushing gutter
Odor	Moderate, Moderate-strong	Moderate	Low	Low in building low strong at lagoon
Fertilizer retention	Good	Good	Poor	Poor
Labor required	High	Moderate	Low	Low

Item	Solid manure	Liquid-Pit	Oxidation ditch	Flushing gutter
Construction cost	Low-Moderate	High	High	Moderate
Operation cost	Low	Low	High	Moderate
Maintenance	Low	Low	High	Moderate-high

9. What special facilities must be available for sick animals?

   A. Provide pens for isolation for sick animals. Have bedded space for 2%-5% of the herd at 40-50 sq. ft./head.

10. Identify four purposes of ventilation in livestock facilities.

    A. Remove moisture from inside the building

    B. Provide fresh air for animals

    C. Remove excess heat in hot weather

    D. Remove odors and gases from animal manure

11. What are some reasons ventilation and/or moisture problems occur in cold buildings?

    A. Buildings don't provide natural ventilation, usually because of inadequate openings.

    B. Ventilation needs are ignored.

    C. Buildings are closed in attempts to increase inside temperatures.

    D. Attached sheds and roof extensions prevent good natural ventilation.

    E. Sanitation and housekeeping leave extra moisture sources (manure, wet bedding, leaky waterers).

12. List some advantages of providing night lighting in beef feedlots.

    A. Less trouble with predators and cattle theft.

    B. Greater animal safety from the quieting effect of night lighting.

    C. Less feed spoilage, because birds seldom roost over lighted feed bunks.

    D. Cattle eat during cool summer nights.

    E. Reduced stress on newly arrived cattle, which are often agitated by darkness.

    F. Better feed availability for timid cattle.

    G. Reduced feedbunk space per head, because of 24-hr. feeding period.

13. What are the primary reasons for building cattle handling facilities?

    A. Direction and control of animal movement.

    B. Reduction of cost and labor requirements to handle animals.

    C. Safety of workers and animals.

    D. Treatment of animals on the farm.

14. What seven functions should a complete organized cattle handling system provide?

    A. Gathering
    B. Directing flow
    C. Holding
    D. Sorting
    E. Positoning
    F. Restraining
    G. Elevating or lowering

15. Plan and diagram a cattle handling facility for 50 head. Consider the following:

    A. Type of operation
    B. General feeding system
    C. Cow-calf or feeder operation
    D. Waste disposal system

TEACHER'S KEY
STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

B. Swine Handling Facilities

1. Deciding on the type of swine production involves the consideration of many factors. When would you recommend?

   A. Farrowing pigs for sale as feeder pigs

      (1) available space is limited, but expansion is desired
      (2) feed supplies for finishing pigs are unavailable or costly
      (3) labor is available, but capital is limited
      (4) a regular income with low investment is desired
      (5) there is local demand for feeder pigs

   B. Farrowing pigs for sale as market hogs

      (1) number of sows to be farrowed and the farrowing schedule
      (2) management system used - pasture, confinement, or combination
      (3) number of pigs desired
      (4) number of pigs purchased as feeder pigs
      (5) climate of the area

   C. Buying and finishing feeder pigs

      (1) caring for baby pigs is not desired
      (2) labor is limited, and finishing feeds are available
      (3) there is a reliable source of feeder pigs

2. Under which conditions would you recommend pasture management?

      (1) want to feed out pigs with minimum building investment
      (2) have pasture available for proper rotation for disease control
      (3) are tenants
      (4) farrow once or twice a year
      (5) farrow up to about 80 sows per year

3. When would you recommend confinement system?

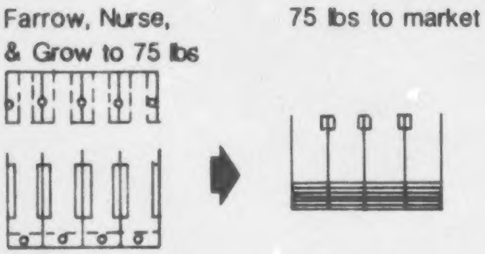
      (1) top level management is available
      (2) a multiple litter farrowing schedule is used
      (3) large number of hogs will be raised
      (4) labor and available space is limited
      (5) capital is available

Producers raise hogs in confinement:

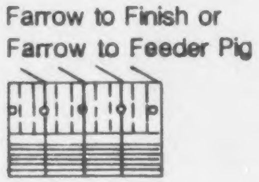
(6) to cut labor and chore time with mechanical feeding and watering
(7) to increase efficiency with better control of feed, diseases and other management practices
(8) to provide better year-round working conditions for themselves
(9) to reduce animal use of high value land

4. Identify the type of production system as either a one-stage, two-stage, or three-stage system.

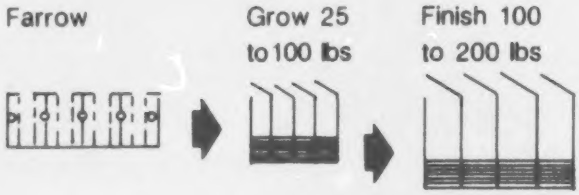
A. Two-stage


Farrow, Nurse,
& Grow to 75 lbs
75 lbs to market

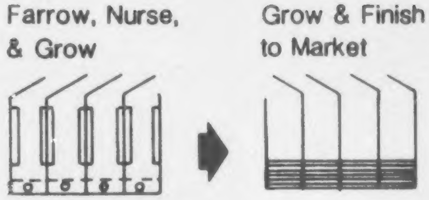
B. One-stage


Farrow to Finish or
Farrow to Feeder Pig

C. Three-stage


Farrow
Grow 25
to 100 lbs
Finish 100
to 200 lbs

D. Two-stage


Farrow, Nurse,
& Grow
Grow & Finish
to Market

5. List some advantages and disadvantages of free stall farrowing:

The advantages are:

A. Labor saving in turning sows out to eat.
B. Labor saving in cleaning individual pens.
C. Less investment if feeders are waterers cleaner pens.
D. Most sows are more relaxed.

The disadvantages are:

A. A sow may go out and in up to 15 times a day and usually lays down each time she enters a pen.

B. If a sow does not want to nurse her litter she leaves the pen.

C. Some sows carry bedding to the alley to make a farrowing nest.

D. Sows leave pens quickly if there is any draft.

E. If a few pigs get out, it is difficult to return them to the right pen unless they are marked.

F. A sow can lie with her head through the door; pigs can crawl up on her and escape.

G. If feeding space is limited, the sows may have to be fed in small groups.

H. Some producers limit feeding the sows for up to 5 days to help control scours in baby pigs; so sows must be fed in the stalls.

I. If the gate at the back of the pen is too high, an old sow with low slung udder is susceptible to mastitis.

6. Identify the space requirements for the following:

		sq. ft. space/head
A.	Finishing, more than 150 lbs.	8
B.	Growing, weaning to 100 lbs.	3-4
C.	Gestating sow, bedded area	15
D.	Shade, sow and litter	20-30
E.	Shade, pigs over 100 lbs.	6

7. Plan and diagram a swine handling facility for 50 head. Consider the following:

A. Product to be marketed
B. Pasture or confinement
C. Building system
D. Litters to be farrowed/year
E. Waste disposal

TEACHER'S KEY

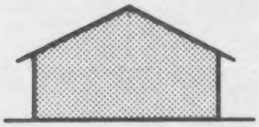
STUDENT WORKSHEET

PLANNING LIVESTOCK HANDLING FACILITIES

C. Sheep Handling Facilities

1. Identify the barn style below and explain when each is used

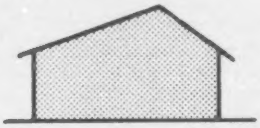
A. Gable



The gable roof is the most widely used for both open-front and enclosed buildings. It is medium in cost and fairly simple to construct and insulate. It is adaptable to natural building ventilation through eave, sidewall, and ridge openings and clear-span construction with trussed rafters.

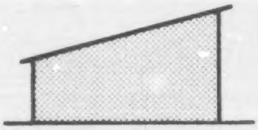
Pole buildings with clear-span wood trusses are used extensively for sheep barns and associated buildings. Wood or steel rigid frames are also clear-span. Post and beam construction is popular in some areas, especially where native lumber is available. Headroom depends on wall height, roof pitch, and type of framing.

B. Off-Set Gable



The off-set gable roof has two slopes of different length, so one building sidewall is higher than the other. Framing commonly requires interior posts although truss or rigid frame gable roof on the high side of the building may provide a clear-span for 2/3 or more of the building width.

C. Shed



The shed roof is widely used on both open-front and enclosed permanent free standing buildings, attached lean-to additions, roof extensions and small movable buildings.

A shed roof building is relatively low in cost, provides good headroom, and is simple to build and insulate. Free standing buildings are easy to ventilate, but ventilataion in attached sheds and under roof extensions is often difficult. Most shed roofs are low pitch (slope) to keep the high side of the roof as low as possible. Post and beam construction is most often used for shed roofs.

2. What major [illegible] need to be considered when planning a sheep operation?

   A. Size of operation

      Number of animals of different age groups to be housed.

   B. Housing Systems

      Cold or warm housing, or some of each. Barn with lot or confinement barn, or some of each. Solid or slotted floor, or some of each.

   C. Building Needs and Location

      Remodeled existing buildings or new construction, or some of each. Feed storage in or away from barn. Cold or warm protected lambing area. Site adequate for buildings, traffic lanes, and expansion.

   D. Feeding

      In a lot or barn. Handfeeding, self-feeding, fenceline bunks, mechanized bunks, or some of each. Hand or automatic watering.

   E. Environment Control

      Insulation and vapor barrier. Mechanical or natural ventilation. Supplemental heat in selected areas for lambing or other. Windbreaks.

   F. Manure Handling

      Solid handling. Periodic hauling from barn and/or lot. Above-ground or under slat storage for solid manure. Approved direct surface disposal or detention ponds for liquid runoff.

3. What factors need to be considered when considering a site location?

   A. Locate a sheep housing facility down wind from the farmhouse; usually north-east or east to minimze summer barnyard odor in the living area.

   B. Buildings and lots should be at least 200 to 300 ft. from the farmhouse.

   C. Whenever possible, locate sheep barns and lots for protection from winter winds and storms and to benefit from winter sunlight. Land sloping at 3'-5' per 100' (3-5%) away from the buildings.

4. List some practices to follow which can control and minimize waste runoff in open lots.

   A. Locate lots away from streams; at least far enough to permit construction, maintenance, and operation of adequate detention structures.

   B. Locate the lot at or near the top of a slope, to reduce outside drainage crossing the lot.

   C. Consider area conditions before building - neighbors, towns, zoning your own residence.

   D. Avoid as much runoff as possible.

      Consider roofing open lots and animal passageways to keep rain and snow separate from livestock wastes.

   E. Divert all drainage from outside the lots, so only the rain which falls on the lot becomes polluted.

   F. Build lots no larger than necessary for your flock size.

5. Identify the following space requirements:

Type of Space	Required space/ewe
Feeder space	16" - 20"
Group-fed	
Shelter space	10-12 sq. ft.
Lot	25-40 sq. ft.
Floor Space	
Solid	12-16 sq. ft.
Slotted	8-10 sq. ft.

6. Design and diagram a sheep handling facility for 50 head. Consider the following:

   A. Size of operation
   B. Housing system
   C. Building needs and location
   D. Feeding system
   E. Waste management system

SAMPLE TEST QUESTIONS

PROVIDING HOUSING AND EQUIPMENT FOR LIVESTOCK

1. Match the following terms with their definition.

D 1. Barn and Feedlot

C 2. Cold Confinement Barn

A 3. Feeding Barn and Lot

B 4. Open Feedlot

E 5. Warm Confinement Barn

A. A facility that provides open lots usually with bedded mounds, for cattle resting and exercising but wth feeding done inside a barn. The partly open barn protects feeding equipment and feed from wind, rain, and snow. Cattle also use the feeding barn for protection during severe weather. This type of facility is primarily used in the Dakotas and Western Minnesota.

B. A facility in which weather protection is limited to a windbreak fence in winter and/or a sunshade in summer. Most lots are unpaved except for a strip of concrete along the feed bunk and around water tanks.

C. A facility that confines cattle to a building with one open side and with doors or panels in the other sides. The air temperature in the building fluctuates with the outside temperature. Feeding is in mechanical or fenceline bunks.

Many such barns are used to expand an older barn and feedlot system.

D. A facility that provides an open-front barn for cattle protection and an open lot wth feeding in mechanical or fenceline bunks. This type of facility is used in areas of relatively high precipitation and usually on farms where fewer than 1000 cattle are fed.

E. A facility that confines cattle to an enclosed, insulated, fan-ventilated building with cold weather control over inside air temperatures. Feeding is usually in mechanical bunks.

True or False

T 1. Controlling feedlot runoff is a factor in location.

T 2. A pollutant is a resource out of place.

T 3. There is little manure handling in pasture systems.

F 4. The open side of barns should face north or west.

T 5. Slope floors toward the barn's or shed's open side.

T 6. Open feedlots are usually unpaved and require more land area than other systems.

F 7. A solid floor building requires less square feet per 1000 lb. animal than slotted floor building.

F 8. Bedding space for sick or isolation animals should be available for 18-20% of the beef herd.

T 9. Large cattle feedlots need scales.

T 10. Cold buildings should not be totally enclosed when trying to raise the inside temperatures.

T 11. When raising swine, pasture management is most practical for operators who want to feed out pigs with minimum building investment.

T 12. When planning building location, you should consider possible future expansion.

T 13. Good ventilation will increase feed efficiency.

F 14. Confinement systems eliminate handling and disposing of manure.

F 15. Free stall farrowing pens are modified so the sow must always stay in the pen and the pigs can leave and enter at will.

F 16. Farrowing stalls provide greater freedom for the sow than do pens.

T 17. Finishing is the stage from pig weights of about 100 lbs. to market size.

T 18. Overcrowding can decrease rate of gain.

T 19. When considering a floor plan you need to determine how the manure will be handled.

T 20. If a building is used only for farrowing, stalls rather than pens are suggested.

T 21. The shed roof is widely used on both open front and enclosed permanent buildings.

T 22. Pole buildings are used extensively for sheep barns.

F 23. Cold housing is usually not adequate for sheep.

F 24. Concrete makes a good floor for sheep in open front barns.

T 25. Slotted floors require no bedding and less labor than solid floors for sheep.

T 26. The slats in slotted floors should run parallel to feeders for sheep.

T 27. Moisture problems generally occur in cold housing when ventilation needs are ignored.

T 28. To reduce waste runoff the feedlots should be no longer than necessary.

F 29. Spreading manure on frozen fields is a recommended practice.

T 30. The gable roof is the most widely used for both open-front and enclosed buildings.

UNIT D: LIVESTOCK SCIENCE

PROBLEM AREA: JUDGING AND EVALUATING MEAT AND LIVESTOCK PRODUCTS

SUGGESTIONS TO THE TEACHER:

This problem area is designed for use with tenth grade or second year students enrolled in an agricultural occupations program. The recommended time for teaching this problem area is prior to planned state or sectional FFA activities. The estimated time for teaching this problem area is 7 to 10 days depending on how much time the teacher wishes to spend on discussion and conducting the suggested exercises. The materialS in this problem area were selected and written with the following assumptions:

1. That all consumers of agricultural products need to receive instruction in determining quality grades of these products.
2. That consumers need to be aware of how to purchase graded agricultural products to receive maximum value and satisfaction.

The instructor is encouraged to conduct a local search to locate other supplementary materials. The items in this packet are for reference or modification as the teacher adapts this problem area to his/her local situation.

CREDIT SOURCES:

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The teacher's guide, worksheets, transparency discussion guide, and suggested test questions were developed by Jerry Pepple, Department of Vocational and Technical Education, University of Illinois. The transparency masters and reference materials were prepared by Vocational Agriculture Service, University of Illinois.

Suggestions and guidance in the development of these materials were provided by the Rural Core Curriculum Pilot Test Teachers.

TEACHER'S GUIDE

I. Unit: Livestock science

II. Problem area: Judging and evaluating meat and livestock products.

III. Objectives: At the close of this problem area the student will be able to:

1. Define and use important terms relating to judging and evaluating meat, poultry and livestock products.
2. Evaluate meat, poultry and livestock products, as desired by the consumer, using established grading procedures.
3. Compare each product with an "ideal" and be able to place meat, poultry and livestock products using systematic procedures and sound judgment as to what constitutes desirable quality.
4. Identify selected retail and wholesale cuts of meat.
5. Demonstrate the ability to compute yield grades of beef.
6. Demonstrate the ability to compute quality grades of beef.
7. Differentiate between beef, pork and lamb species of meat.

IV. Suggested interest approaches:

1. Obtain selected cuts of meat or poultry or eggs which are of varying grades or quality and ask students to select the one they would purchase. Have students give reasons for their selection and write them on the board. After the reasons are given, explain the importance of being able to select products by standards and grades.
2. Review past experiences of students to find out what types of judging and evaluation they have done through 4-H or when buying meat or livestock products.
3. Ask the class to identify selected retail cuts of meat or cheeses by taking a field trip to a store or meat locker. The students should note the grades and prices of the products and how the prices change as the grade changes.
4. Discuss the reasons a consumer would intentionally select various grades of the same livestock and/or poultry product.

V. Anticipated problems and concerns of students:

1. Why is it important to know the names of the cuts of meat?
2. How is meat evaluation and livestock evaluation related?

3. What is quality grading and yield grading of meat?

4. How is meat evaluated?

5. Where are the primal or wholesale cuts located on a carcass?

6. What factors should I consider in evaluating meat carcasses?

7. What cards are used in meat evaluation and how do I fill them out?

8. When evaluating poultry for egg production, what factors should I consider?

9. How do I evaluate ready-to-cook poultry?

10. What factors are considered when selecting the correct quality of ready-to-cook poultry?

11. What cards are used in judging poultry and eggs and how do I fill them out?

12. How do I grade eggs for interior quality?

13. How do I grade eggs for exterior quality?

14. How do I grade break-out eggs for quality?

15. Why is flavor and odor important in milk juding?

16. What are the steps in evaluating the flavor of milk?

17. What are the flavors of milk and how are they scored?

18. What are the flavors of cottage chesse and how do I score them?

19. What are the common varieties of cheeses?

20. What are milker unit heads and how are they graded?

21. What cards are used in judging and scoring milk and cheese and how do I fill them out?

VI. Suggested learning activities and experiences:

A. Meat Evaluation

1. Begin the instructional phase of his problem area with the following steps:

   a. Conduct an interest approach

   b. Assist students in the identification of goals and objectives.

   c. Have students identify their problems and concerns per livestock product.

2. Select those problems and concerns relating to meat evaluation and grading (1-7). Have students answer these problems and concerns through class discussion and from information supplied by the teacher. Use the following instructional aids:

   a. VAS Booklet, "Meat Judging and Grading"

   b. Transparencies on beef, swine, and sheep

   c. For information on identifying retail cuts, refer to the following slidefilms from Vocational Agriculture Service:

      1. 180-1 Identification of Retail Meat Cuts
      2. 182A Identification of Pork Cuts
      3. 183A Identification of Beef Cuts
      4. 185A Identification of Lamb Cuts

   d. VAS Flash Cards, C180-2, Identification of Retail Meat Cuts.

3. Organize a field trip to a locker plant or retail meat store and observe a butcher cut a wholesale beef, swine and sheep carcass into the retail cuts. Identify these retail cuts as they are made.

4. View the above retail cut filmstrips and/or flashcards to identify the retail cuts and have students name the specie and wholesale cut for selected pictures.

5. Handout the Worksheet, "Meat Judging and Grading," and have students complete and submit for evaluation.

6. Have students plan for participation in a chapter, sectional or state meat judging contest.

B. Poultry and Egg Grading and Evaluation

   1. Select those problems and concerns relating to poultry and egg evaluation and grading (8-14). Have students answer these problems and concerns through class discussion and from information supplied by the teacher.

      Use the following instructional aids:

      a. VAS Booklet, "Judging and Grading Poultry and Eggs," revised.

      b. Information Sheets:

        1. Judging Ready-to-Cook Poultry
        2. Interior Egg Judging
        3. Chicken Parts

2. Distribute the Worksheet, "Evaluating Poultry and Eggs," and have students complete and submit for evaluation.

3. Obtain ready to cook poultry and conduct a demonstration on grading and completing the score card on ready-to-cook poultry.

4. Obtain a sample of upgraded eggs and have students grade the eggs by completing the interior, exterior, and breakout judging cards.

5. Hold a class discussion on the evaluation of the egg classes by having students give oral reasons for their placing of rings.

6. Plan a field trip to a local farm which has a laying flock. Select individual layers and have students place the birds on rate of production by considering the factors discussed in class.

7. Have students plan for participation in a chapter, sectional or state poultry and egg judging contest.

C. Judging and Scoring Milk and Cheese

1. Select those problems and concerns relating to milk and cheese evaluation and grading (15-21). Have students answer these problems and concerns through class discussion, reference materials, field trips and/or resource speakers.

2. Prepare samples of milk which are fairly strong. Demonstrate the correct procedure to follow in evaluating milk samples. Then, have the students evaluate the samples using the milk scoring guide printed in the VAS Milk and Cheese Judging Booklet and the score card.

3. Prepare and have students evaluate off-flavored cottage cheese. Use the FFA score card and the suggested scoring system printed in the VAS Judging Booklet.

4. Plan a field trip to a dairy farm and observe milk handling procedures. Discuss with the students, during the field trip, how the flavors of milk are affected and/or controlled by various handling and storing procedures.

5. Obtain sample milker unit heads and demonstrate how to properly evaluate the parts and score the milker unit heads on the suggested score card.

6. Have students plan for participation in a chapter, sectional or state milk and cheese judging contest.

VII. Application procedures:

1. After class members have solved their problems and concerns, answered the basic questions and become familiar with the process and need for grading and evaluating livestock and poultry products, the judging exercises can be used to provide students with practice in selecting and critically evaluating certain agricultural products.

2. If sectional and state contests are to be used as an instructional aid, then the time to teach this problem area would need to coincide with the scheduled contest dates.

3. At the close of this problem area, the class members should be able to write or prepare an oral speech on the purchasing or various grades of agricultural products as related to their uses and price.

VIII. Evaluation:

1. Administer and grade suggested worksheets in this problem area.

2. Score students' placings of various rings of livestock and poultry products.

3. Administer test using sample questions from this problem area.

4. Evaluate the students' reports on the purchasing of agricultural products when considering use, grade and prices.

IX. References and aids:

From Vocational Agriculture Service:

1. Meat Judging and Grading, 4th Revision
2. Judging and Grading Poultry and Eggs, Revised
3. Judging and Scoring Milk and Cheese, 3rd Revision
4. Slidefilms:

180-1	Identification of Retail Meat Cuts
180A	Identification of Pork Cuts
180A	Identification of Beef Cuts
180A	Identification of Lamb Cuts

5. Flashcards C180-2, Identification of Retail Meat Cuts

Included with this problem area:

1. Transparencies on beef, swine, sheep and poultry

2. Worksheets and Teacher's Key:

   Meat Judging and Grading
   Evaluating Poultry and Eggs

3. Information Sheets:

   Cheese
   Milk

4. Sample Test Questions with Teacher's Key

STUDENT INFORMATION SHEET

MILK

Milk is a centuries-old food which played an important role in the diets of primitive man. Milk can be obtained from many animals. Today, mainly cow's milk is used for consumption.

In Illinois alone, 1979 statistics show milk production at 2,420 million pounds compared to the total United States production of 123,623 million pounds. Illinois ranks about twelfth in the production of dairy products. In the same year, Illinois produced 3,495,000 lbs. of butter and 96,968,000 pounds of cheese. With this large amount of dairy products processing, the U.S. Public Health Service has standards to which to adhere.

Milk may contain impurities that need to be destroyed. Pasteurization is required for safe consumption without significantly changing the flavor or food value.

Pasteurization is defined by the United States Public Health Service as "the process of heating every particle of milk or milk product to at least 145°F and holding at or above this temperature for at least 30 minutes or to at least 161°F., and holding at or above this temperature continuously for at least 15 seconds in approved and properly operated equipment." Milk pasteurized by either process is cooled to 45°F.

Homogenization has been added to the process to enhance the quality and taste of milk without adding or taking away any food value. The milk has more body and a creamier flavor. This process is optional, but most milk sold to consumers is homegenized.

Homogenization begins with the heated pasteurized milk and is channeled under high pressure through the tiny holes of a homogenizer. The milkfat breaks up into particles too small to rise as cream and thus the milk retains a more uniform consistency.

On the market, milk appears in various forms to appeal to various tastes. The Food and Drug Administration has established percentage standards of milkfat and solids-not-fat. Whole milk must contain 3.25% milkfat and 8.25% solids-not-fat. Additions of Vitamins A & D are optional.

Lowfat milk also contains 8.25% solids-not-fat, but the milkfat can vary in levels of 2%, 1.5% or 1% milkfat. 2000 International Units (UI) of Vitamin A per quart must be added to offset the removal of milkfat. The addition of Vitamin D is optional. Skim milk has 8.25% solids-not-fat and less than 0.5% milkfat and fortified with 2000 IU of Vitamin A per quart. Whole and low-fat chocolate milk has chocolate or cocoa and sweetner added to it. Either form must contain 2000 IU of Vitamin A per quart.

For further discussion on evaporated and condensed milk, dry milk, cream, cultured milk and other products, consult publications from the National Dairy Council, Milk - Ageless Food with Natural Appeal.

Milk has an essential role in the diet today. One cup (8 oz.) of milk contains about 18% of the protein needed to meet the recommended daily dietary allowances, about 22% of the Riboflavin (B_2) needed, 30% of the calcium needed, 6% vitamin A, 6% thiamine (B_1), 4% ivtamin C and 1% iron and niacin.

Protein functions to build and repair body tissues and help form antibodies and furnish energy. Riboflavin works with enzymes to break down and utilize proteins, fats and carbohydrates. Riboflavin is not stored in the body, so it must be supplied regularly.

Calcium's main function is to build and maintain bones and teeth and small amounts aid in proper nerve transmission. Three-fourths of the calcium supplied in the diet comes from dairy products. Vitamin A is carried by the milkfat and aids in the growth and repair of the body tissues and helps maintain disease-free skin. It helps protect the mucous membranes of the mouth, throat, nose and lungs, reducing susceptibility to infection. Thiamine or Vitamin B_1, helps break down carbohydrates for better absorption. Thiamine relates to a healthy nervous system and mental attitude. Vitamin C helps maintain the connective tissues in skin, ligaments and bones. Niacin helps improve circulation and is needed for proper function of the nervous system. Iron exists in all parts of the body containing protein. Iron combines with copper in making hemoglobin, the transporter of oxygen in the blood. Milk can be fortified with Vitamin D, but that is optional.

STUDENT INFORMATION SHEET

CHEESE

Milk is the basis of all cheese. Some types use both milk and cream, whereas other cheeses may be produced from mixtures of whole and skim milk. The quality of milk used for cheese is very important. Milk used for cheese is carefully controlled and almost always pasteurized to kill the pathogens.

Depending on the type of cheese to be made, the milk must first be standardized to that percentage. It is then pasteurized and coagulated to the proper temperature. A starter of lactic acid-producing bacteria is added to the warm milk. This bacteria is allowed to grow until it reaches the necessary acidity. The acidity accelerates the enzyme rennin. Rennin (rennet extract) is obtained from young calves' stomachs.

The acid and rennet forms a gel-like curd. The curd must shrink and expel the liquid portion called whey. To do this, the curd is cut, heated stirred and then drained. The curd is then placed in a mold. Again, it is pressed and drained, then salted.

To produce different types of cheese, a ripening or curing must take place. The cheese becomes more supple and the flavor is formed depending on whichever is applicable, on the action of yeasts, molds, or bacteria.

Cheese dates back to thousands of years before Christ by a traveller who placed milk in a pouch made of a sheep's stomach. The heat and enzymes in the stomach lining caused the milk to coagulate into the first cheese.

Since that discovery, cheese has gone through many changes to produce many varieties that differ by texture and flavor. Whatever the cheese may be, it stems from the basic process of milk coagulation to produce the curd either by the separate or combined action of enzymes and lactic acid.

For many years, cheese was the easiest way to obtain a milk product in a solid and less perishable form. After the fall of the Roman Empire, cheese recipes were guarded by the monasteries. Cheese types became known for the locality they originated in. Although similar types of cheeses exist around the world, they may be known by different names.

Cheese, defined by the National Dairy Council, is the concentration of all or part of the components of milk obtained through the coagulation of the major milk protein, casein, by suitable enzymes and/or by acid produced by the bacteria. The curd separated from the whey is used at once in unripened cheeses. In other cheeses the curd is ripened by the action of beneficial bacteria, molds, yeasts and enzymes.

The process of manufacturing cheese is basically the same. Variations in the procedure account for the many types of cheese available. In this Information Sheet, the specific process for cheddar, Swiss and parmesan will be discussed. Refer to the National Dairy Council's publication, Newer Knowledge of Cheese, for the processes pertaining to other cheeses.

A. CHEDDAR CHEESE

Cheddar cheese is made from pasteurized whole milk. Once the lactic acid producing bacteria is added, the cheese is ripened for 30-60 minutes at 86°F. A small amount of annatto is added to color the cheese. Annatto can be obtained from the seed pods of a Central American tree.

When the milk is at the proper acidity level, the enzyme rennet is added. Three to three and one-half ozs. of rennet will coagulate 1000 pounds of milk in 30 minutes. The curd is then cut by a wire frame into cubes one-fourth to three-eighths of an inch. Heating the curd then separates the whey. The curd is sliced, and turned regularly, stacked and re-stacked to mat the curd and expel excess whey. This stacking is called "cheddaring" which gives the cheese its characteristic body. The curd is cut up and salted and put into a mold. The warm cheese is pressed gradually for 30-60 minutes to expel excess whey. This produces a compact mass.

The cheese is removed from the mold and kept for 3-5 days at 50-60° to form a rind. The cheese is coated with wax or paraffin. The cheese is then cut up, dated and sent to the stores for purchase by the consumer.

B. SWISS CHEESE

Swiss cheese is made with partially skimmed milk. The milk is ripened at 88-94°F with a starter culture of two species of bacteria. The addition of a third culture results in the holes or eye formation and flavor of the cheese.

Once the desired acidity is met, the rennet is added. The curd is cut until the particles are about one-eighth inch in diameter. The curd and whey are heated at 125-129°F for one hour with constant agitation. The curd is allowed to settle out and with pressure plates applied, the whey is removed. Once the whey is drained, the curd is curd is cut and salted in brine for 1 to 3 days. The cheese is dried at 50-55°F and sealed in plastic film and placed in a box under pressure to assist in the eye formation for 6 to 10 days. The cheese is transferred to a hot room 70-76°F for 3-4 weeks to finish the eye formation. The cheese is then held in a curing room, 35-40°F anywhere from 3-9 months or longer to develop its characteristic flavor.

C. PARMESAN CHEESE

Parmesan is a hard grating cheese. Pasteurized whole and skim milk are mixed and put into copper vats at 90-95°F. The copper vat contributes a small amount of copper which induces the brittle texture. The starter is added and after 5-10 minutes the rennet is added and coagulates the milk within 20-30 minutes. The curd is cut and stirred for 45 minutes at 108°F, then raised to 124°F. The curd is drained and the whey is subsequently removed. The cheese is salted in brine for 14-15 days, and dried 8-10 days. The cheese is cured in a cool room, 50°F, turned frequently and rubbed with an edible oil to prevent mold growth. The cheese is then covered with a brown or black coating of oil, lampblack and Fullers earth. The cheese cures within 14 months to two years or longer.

Cheese is a concentrated milk source. Cheese is rich in protein, calcium and nearly all the vitamins of milk. The best way to store cheese to retain its nutritive values is in its original wrapper. If the wrapper is torn, the cheese should be re-wrapped in foil or plastic to protect the surface from drying out.

STUDENT WORKSHEET

MEAT JUDGING AND GRADING

1. Match the following terms: (refer to VAS, Meat Judging and Grading booklet)

_____ A Cattle

_____ Aitchbone

_____ Back fat thickness

_____ Bucky

_____ Finish

_____ Heifer carcass

_____ Intermuscular fat

_____ Intramuscular fat

_____ Lamb carcass

_____ Length of carcass

_____ Marbling

_____ Meatiness

_____ Steer carcass

A. Carcass from an ovine species generally under 12-14 months of age. The distinguishing features are: a break-joint on the front legs, narrow red ribs, red in shank bones, and light-colored, fine-textured lean.

B. Average of three measurements of backfat thickness taken at the first rib, the last rib and the last lumbar vertebra. The measurements are taken with the ruler parallel to the floor while the carcass is hanging. The measurement includes the thickness of the skin.

C. A condition found in uncastrated or late castrated lambs including heavy shoulders, thick neck, absence of fat cod region, and dark-colored lean.

D. Distance from anterior side of the first rib to the anterior tip of the aitchbone.

E. Refers to the amount and distribution of the external and internal fat, as well as consideration of the color and firmness of this fat.

F. Are recognized by the presence of pizzle eye, bald spot, and cod. Also the pelvic bone is generally shorter and has a greater curvature than is found in females. Classification is made on the basis of sex condition only, without consideration of age.

G. Visible fat between the muscle system

H. Are identified by the presence of an udder with its characteristic smooth fat, and a slightly larger pelvic cavity and longer, straight aitchbone than is found in steers. While heifer carcasses are generally slightly more angular than steers, they do not exhibit these features to the extent found in cows. There should be some evidence of youth in the carcass, such as moderate size buttons on the chine and other evidence of some youthfulness on the bone.

I. Visible fat within the muscle--commonly called marbling or intermingling of fat with lean.

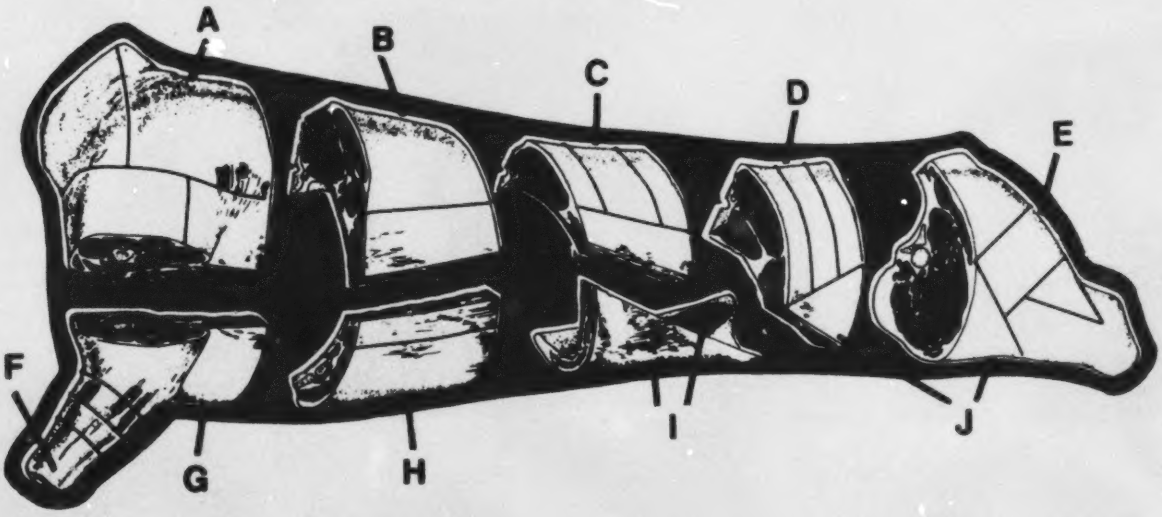
J. The pelvic bone where it is split at the symphysis pubis in dividing the carcass into the two halves.

K. The intramuscular fat found in finished beef.

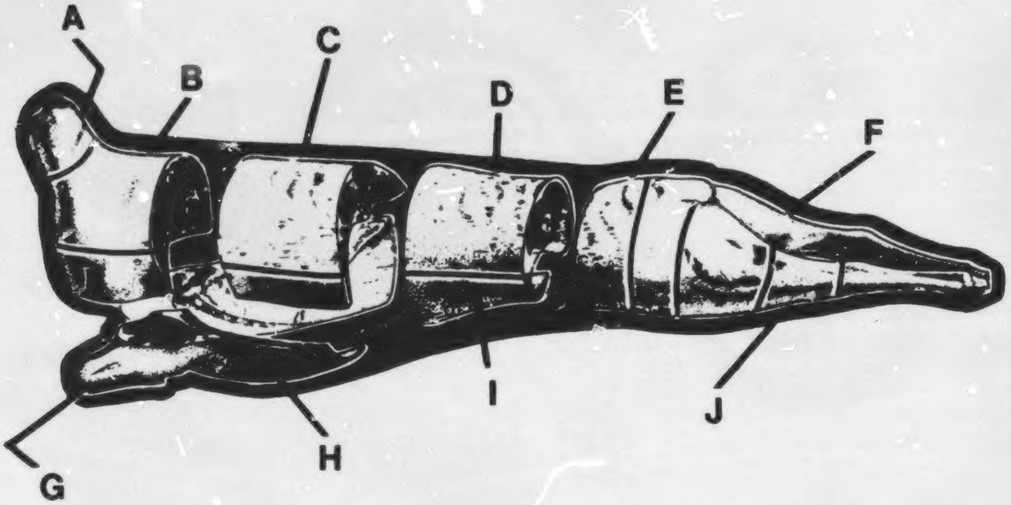
L. In meat terminology refers to the two sides of beef from one animal.

M. The muscular development in a carcass or cut indicating a high ratio of lean to fat.

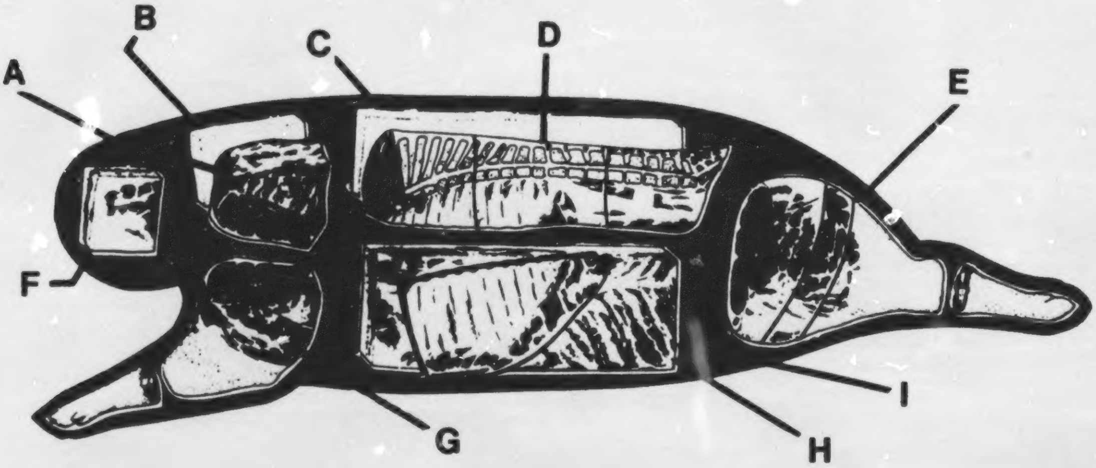
2. Identify the following wholesale beef cuts.



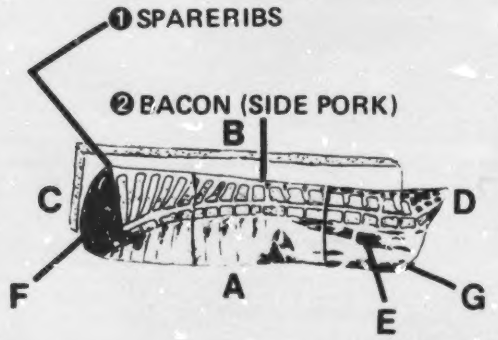
3. Identify the following wholesale lamb cuts.


A
B
C
D
E
F
J
I
H
G

4. Identify the following wholesale pork cuts.



5. Identify the following parts of bacon.



6. Calculate the yield grade for the following beef animal using the "short cut" method. (refer to page 34, Meat Judging and Grading Booklet)

a. carcass weight: 800 lbs
b. loin-eye area: 14 sq. in.
c. fat thickness: .7 inches
d. KPH fat: 2.0 percent

	Carcass	Difference from Average	Adjustments
weight			
loin-eye area			
fat thickness			
percent of KPH			

Total adjustment =
Yield grade =

7. Correctly match the description with the species:

A. Size of cut

_____	1.	Beef	a.	intermediate
_____	2.	Lamb	b.	large
_____	3.	Pork	c.	small

B. Color of lean

_____	1.	Beef	a.	bright to dark red
_____	2.	Lamb	b.	light pink
_____	3.	Pork	c.	pinkish brown

C. Type of fat

_____ 1. Beef

_____ 2. Lamb

_____ 3. Pork

a. chalk white; brittle

b. white or creamy white; firm and rather dry

c. white; greasy

8. Identify the factors to consider when judging carcasses by evaluating:

a. muscling b. quality c. finish

Factors to Consider in Judging Beef Carcasses

A. Muscling

B. Quality

C. Finish

Factors to Consider in Lamb Judging

A. Muscling

B. Finish

C. Quality

Factors to Consider in Judging Pork Carcasses

A. Muscling

B. Quality

C. Finish

STUDENT WORKSHEET

EVALUATING POULTRY AND EGGS

1. Identify three things which you should consider when judging birds for egg production:

   a.
   b.
   c.

2. Identify the order of bleaching and the approximate time required to fully bleach.

	Part	Time
a.		
b.		
c.		
d.		
e.		

3. Complete the following chart for determining the grade of ready-to-cook poultry.

	A-Quality	B-Quality	C-Quality
Disjointed Bones			
Broken Bones			
Missing Parts			
Exposed Flesh			

4. Name three factors which are considered when grading eggs for "interior quality":

   a.
   b.
   c.

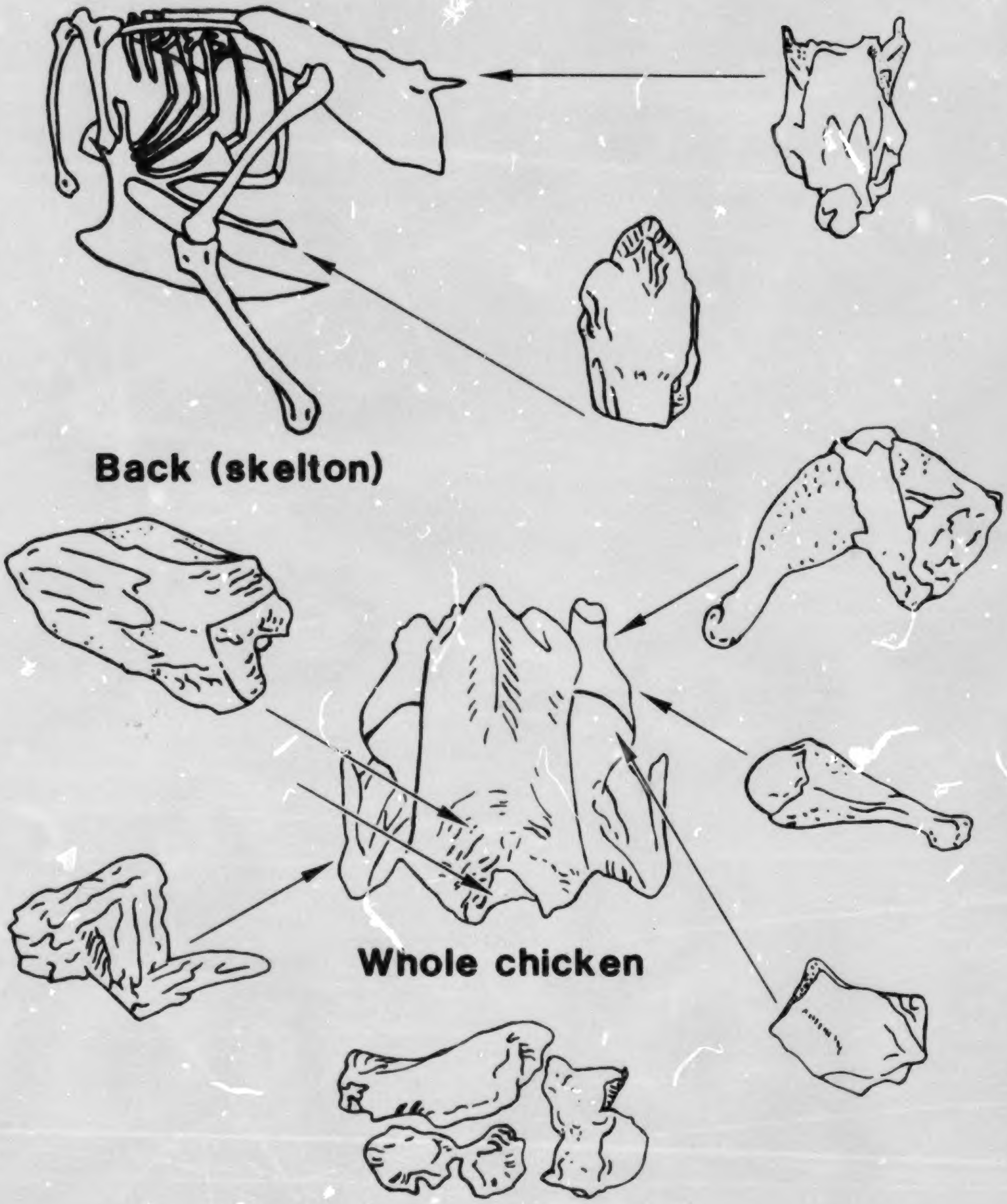
5. Name four factors to evaluate an egg shell by when doing "exterior grading":

   a.
   b.
   c.
   d.

6. Name three factors to consider when grading eggs for "break-out quality."

   a.
   b.
   c.

7. Identify the following parts of a chicken: back, breast, drumstick, leg, rib, thigh, wing and wishbone.


Back (skelton)
Whole chicken

STUDENT WORKSHEET

MILK

1. What are the differences between whole milk, skim milk and 2% milk?

2. What is the difference between pasteurization and homogenization?

3. Match the following off-flavors of milk to their cause:

_____1. Bitter
_____2. Garlic/onion
_____3. Malty
_____4. Metallic
_____5. Musty
_____6. Rancid
_____7. Salty
_____8. Unclean

A. Cow consumes wild garlic/onion distinctive by odor and taste.

B. Flavor resembles stale fat and induced by enzyme reaction.

C. Seldom found except in pasteurized milk held too long or at too high a temperature.

D. Strong feeds or weeds consumed by cow and carried through into the milk.

E. When milk comes into contact with a corroded metal; rusty milk can lids.

F. Characteristic of a cow with infected milk glands (otherwise known as mastitis).

G. From stagnant feed, water or moldy hay consumed by cow.

H. Certain bacteria from improperly cleaned milking equipment.

STUDENT WORKSHEET

CHEESE

1. What type of milk is used for low-fat cheese?

2. What is used to accelerate the rennin?

3. Where is rennin found?

4. Describe the curing process and what its function is in processing cheese.

5. What is your favorite cheese and how is it made?

6. Why is parmesan cheese coated with oil during curing?

7. Is cheese a good source of calcium?

8. What are some other cheeses and what are they used for?

*Questions and answers will depend on class discussion.

TEACHER'S KEY

STUDENT WORKSHEET

MEAT JUDGING AND GRADING

1. Match the following terms: (refer to VAS, Meat Judging and Grading booklet)

L	A Cattle
J	Aitchbone
B	Back fat thickness
C	Bucky
E	Finish
H	Heifer carcass
G	Intermuscular fat
I	Intramuscular fat
A	Lamb carcass
D	Length of carcass
K	Marbling
M	Meatiness
F	Steer carcass

A. Carcass from an ovine species generally under 12-14 months of age. The distinguishing features are: a break-joint on the front legs, narrow red ribs, red in shank bones, and light-colored, fine-textured lean.

B. Average of three measurements of backfat thickness taken at the first rib, the last rib and the last lumbar vertebra. The measurements are taken with the ruler parallel to the floor while the carcass is hanging. The measurement includes the thickness of the skin.

C. A condition found in uncastrated or late castrated lambs including heavy shoulders, thick neck, absence of fat cod region, and dark-colored lean.

D. Distance from anterior side of the first rib to the anterior tip of the aitchbone.

E. Refers to the amount and distribution of the external and internal fat, as well as consideration of the color and firmness of this fat.

F. Are recognized by the presence of pizzle eye, bald spot, and cod. Also the pelvic bone is generally shorter and has a greater curvature than is found in females. Classification is made on the basis of sex condition only, without consideration of age.

G. Visible fat between the muscle system

H. Are identified by the presence of an udder with its characteristic smooth fat, and a slightly larger pelvic cavity and longer, straight aitchbone than is found in steers. While heifer carcasses are generally slightly more angular than steers, they do not exhibit these features to the extent found in cows. There should be some evidence of youth in the carcass, such as moderate size buttons on the chine and other evidence of some youthfulness on the bone.

I. Visible fat within the muscle--commonly called marbling or intermingling of fat with lean.

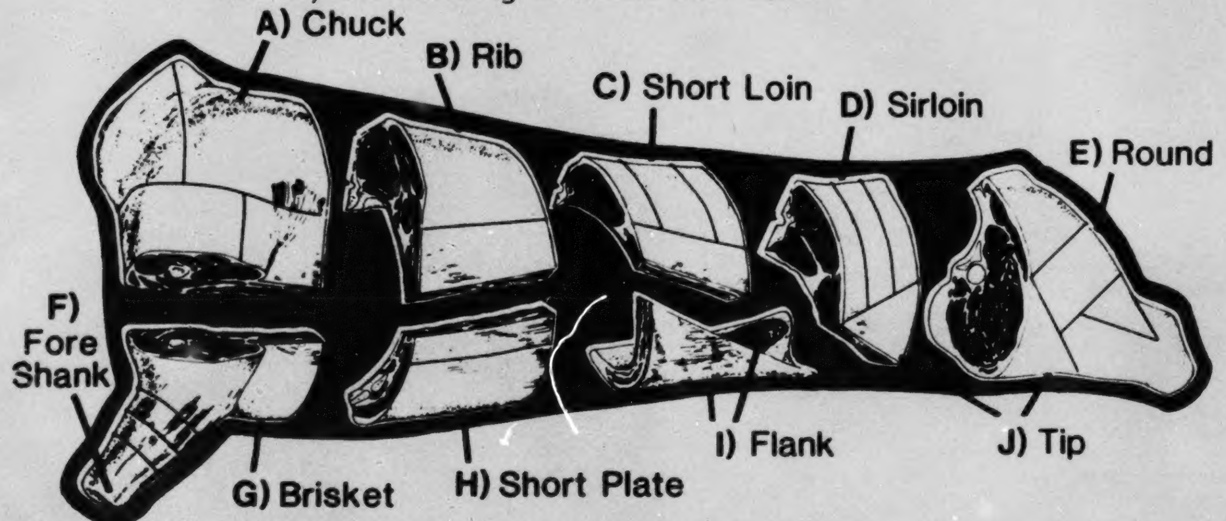
J. The pelvic bone where it is split at the symphysis pubis in dividing the carcass into the two halves.

K. The intramuscular fat found in finished beef.

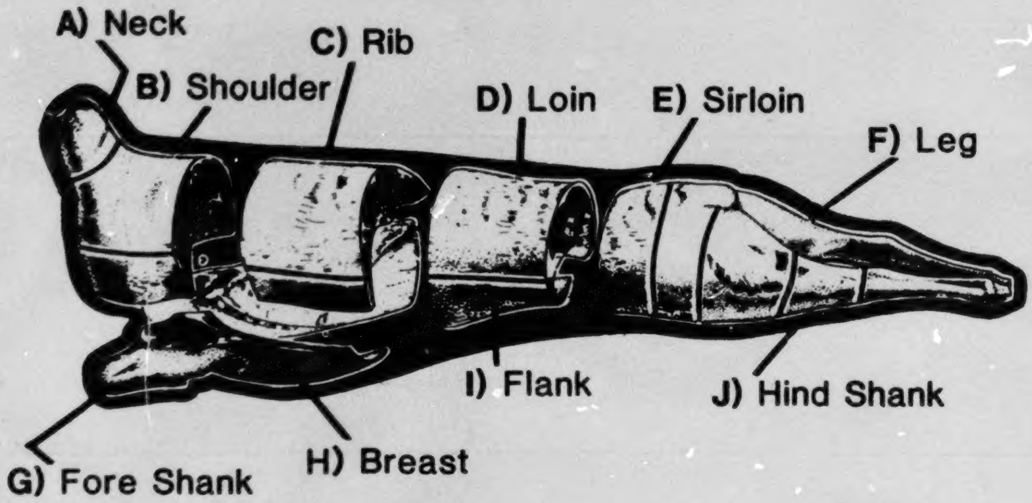
L. In meat terminology refers to the two sides of beef from one animal.

M. The muscular development in a carcass or cut indicating a high ratio of lean to fat.

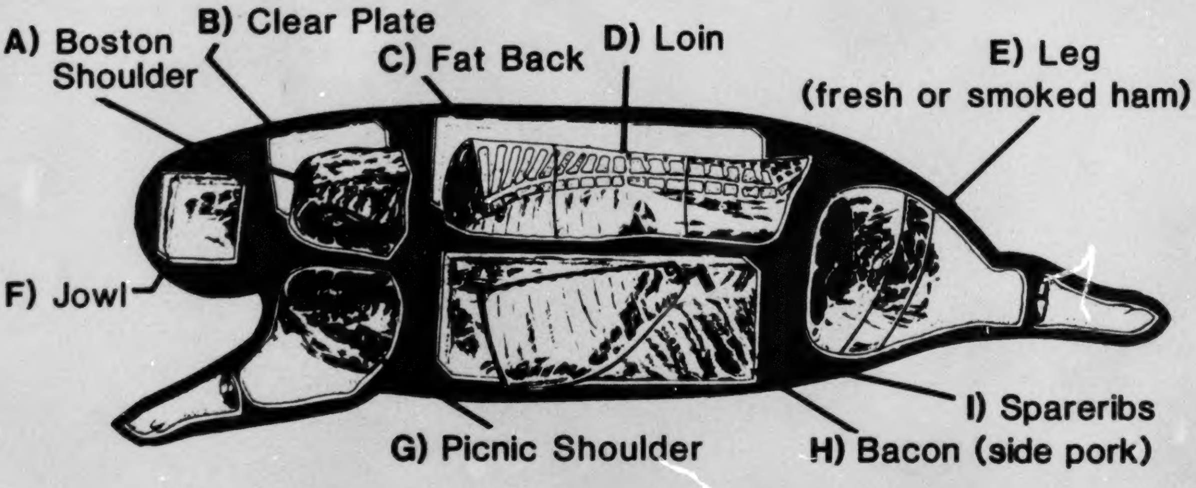
2. Identify the following wholesale beef cuts.



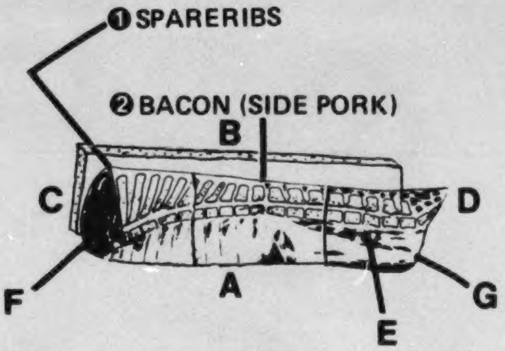
3. Identify the following wholesale lamb cuts.


A) Neck
B) Shoulder
C) Rib
D) Loin
E) Sirloin
F) Leg
G) Fore Shank
H) Breast
I) Flank
J) Hind Shank

4. Identify the following wholesale pork cuts.


A) Boston Shoulder
B) Clear Plate
C) Fat Back
D) Loin
E) Leg (fresh or smoked ham)
F) Jowl
G) Picnic Shoulder
H) Bacon (side pork)
I) Spareribs

5. Identify the following parts of bacon.



A) Navel Side
B) Loin Side
C) Brisket End (Shoulder End)
D) Flank End (Ham End)
E) Belly Pocket
F) Fore Flank
G) Flank

6. Calculate the yield grade for the following beef animal using the "short cut" method. (refer to page 34, Meat Judging and Grading Booklet)

a.	carcass weight:	800 lbs
b.	loin-eye area:	14 sq. in.
c.	fat thickness:	.7 inches
d.	KPH fat:	2.0 percent

	Carcass	Difference from Average	Adjustments
weight	800.00	100.00	+0.80 (2x.4)
loin-eye area	14.00	3.00	-0.90 (3x.3)
fat thickness	0.70	0.10	+0.25 (1x.25)
percent of KPH	2.00	1.50	-0.30 (1.5x2)

Total adjustment = -.15
Yield grade = 3.50 - .15 = 3.35

7. Correctly match the description with the species:

A. Size of cut

b 1. Beef — a. intermediate
c 2. Lamb — b. large
a 3. Pork — c. small

B. Color of lean

a 1. Beef — a. bright to dark red
c 2. Lamb — b. light pink
b 3. Pork — c. pinkish brown

C. Type of fat

b 1. Beef — a. chalk white; brittle

a 2. Lamb — b. white or creamy white; firm and rather dry

c 3. Pork — c. white; greasy

8. Identify the factors to consider when judging carcasses by evaluating:

a. muscling b. quality c. finish

Factors to Consider in Judging Beef Carcasses

A. Muscling

1. Length of carcass
2. Length of hindshank
3. Plumpness of round
4. Thickness of round
5. Width of loin
6. Fullness of loin
7. Depth of loin
8. Thickness through the cod
9. Thickness through the cod
10. Length of neck
11. Squareness of chuck
12. Plumpness and fullness of the ribeye
13. Thickness from end to end
14. Balance (proportion of carcass to the high price regions)

B. Quality

1. Youth
2. Extent, fineness and distribution of marbling
3. Brightness and acceptable color of lean
4. Uniformity of ribeye color
5. Firmness of ribeye (lean)
6. Firmness of ribeye (lean)
7. Texture of lean

C. Finish

1. Firmness
2. Color
3. Uniformity of distribution
4. Amount of pelvic, kidney and heart fat
5. Size of kidney knob
6. Thickness over chine, rib, rump, chuck, brisket and plate
7. Amount of fat at ribeye

Factors to Consider in Lamb Judging

A. Muscling

1. Length of shank
2. Plumpness of leg
3. Width and length of leg
4. Width of saddle (hind)
5. Width of loin
6. Fullness of loin
7. Size of ribeye
8. Shortness of neck
9. Overall balance of carcass

B. Finish

1. Color
2. Firmness of finish
3. Extent of finish over leg and shoulder
4. Size of kidney knob
5. Amount of pelvic fat
6. Amount of overflow fat
7. Smoothness of distribution of finish

C. Quality

1. Youth
2. Color of lean
3. Color of fat
4. Feathering between the ribs
5. Firmness of flank
6. Fat lacing in the flanks
7. Marbling, texture, firmness and color of ribeye (ribbed carcasses)

Factors to Consider in Judging Pork Carcasses

A. Muscling

1. Length of carcass
2. Length of ham shank
3. Plumpness of ham
4. Thickness, width and length of ham
5. Width and depth of loin
6. Size of loin eye
7. Fullness through the sirloin
8. Thickness through the shoulder

B. Quality

1. Firmness
2. Color
3. Overflow fat
4. Feathering
5. Marbling
6. Texture

C. Finish

1. Thickness of backfat
2. Firmness of fat
3. Color of fat
4. Distribution of fat deposits

TEACHER'S KEY
STUDENT WORKSHEET
EVALUATING POULTRY AND EGGS

1. Identify three things which you should consider when judging birds for egg production:

   a. Present production
   b. Past production
   c. Rate or intensity of production

2. Identify the order of bleaching and the approximate time required to fully bleach.

	Part	Time
a.	Vent	1 week
b.	Eye Ring	7-10 days
c.	Ear Lobe	7-10 days
d.	Beak	4-6 weeks
e.	Shanks	4-6 weeks

3. Complete the following chart for determining the grade of ready-to-cook poultry.

	A-Quality	B-Quality	C-Quality
Disjointed Bones	one	two disjointed and none broken	no limit
Broken Bones	none	one disjointed	no limit one broken
Missing Parts	Using tips and tails	wing tips, 2nd wing joint and tail	wing tips wings, and tail
Exposed Flesh	Breast & legs none	Breast & legs- 1½ inches	no limit

4. Name three factors which are considered when grading eggs for "interior quality":

   a. air cell
   b. yolk condition
   c. condition of white

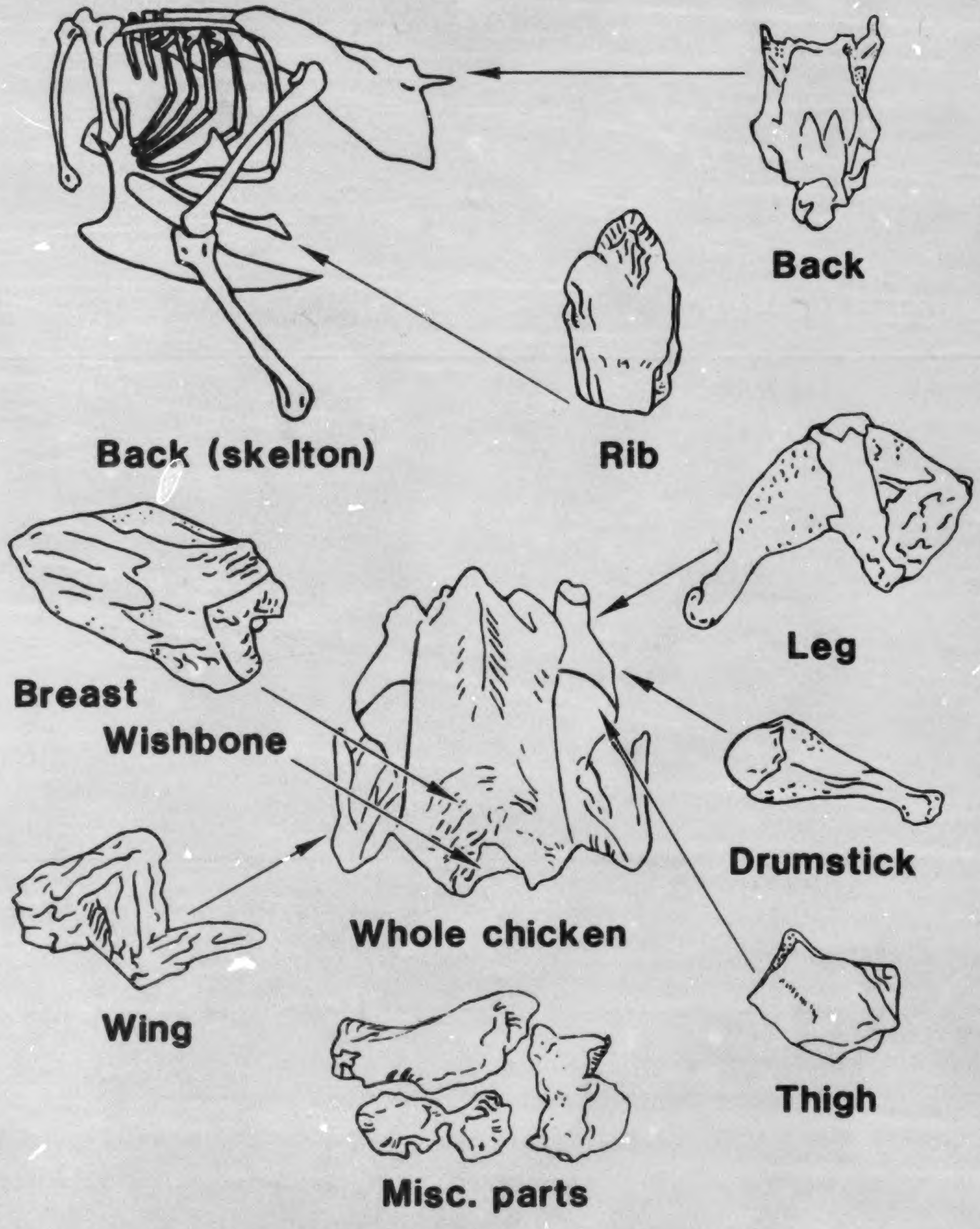
5. Name four factors to evaluate an egg shell by when doing "exterior grading":

   a. color
   b. shape
   c. soundness
   d. cleanliness

6. Name three factors to consider when grading eggs for "break-out quality."

   a. amount of height of the thick albumen
   b. shape of yolk
   c. freedom from defects

7. Identify the following parts of a chicken: back, breast, drumstick, leg, rib, thigh, wing and wishbone.


Back
Back (skelton)
Rib
Leg
Breast
Wishbone
Drumstick
Whole chicken
Wing
Thigh
Misc. parts

TEACHER'S KEY

STUDENT WORKSHEET

MILK

1. What are the differences between whole milk, skim milk and 2% milk?

   (Refer to Student Information Sheet on Milk)

2. What is the difference between pasteurization and homogenization?

   (Refer to Student Information Sheet on Milk)

3. Match the following off-flavors of milk to their cause:

D 1. Bitter
A 2. Garlic/onion
H 3. Malty
E 4. Metallic
G 5. Musty
B 6. Rancid
F 7. Salty
C 8. Unclean

A. Cow consumes wild garlic/onion distinctive by odor and taste.

B. Flavor resembles stale fat and induced by enzyme reaction.

C. Seldom found except in pasteurized milk held too long or at too high a temperature.

D. Strong feeds or weeds consumed by cow and carried through into the milk.

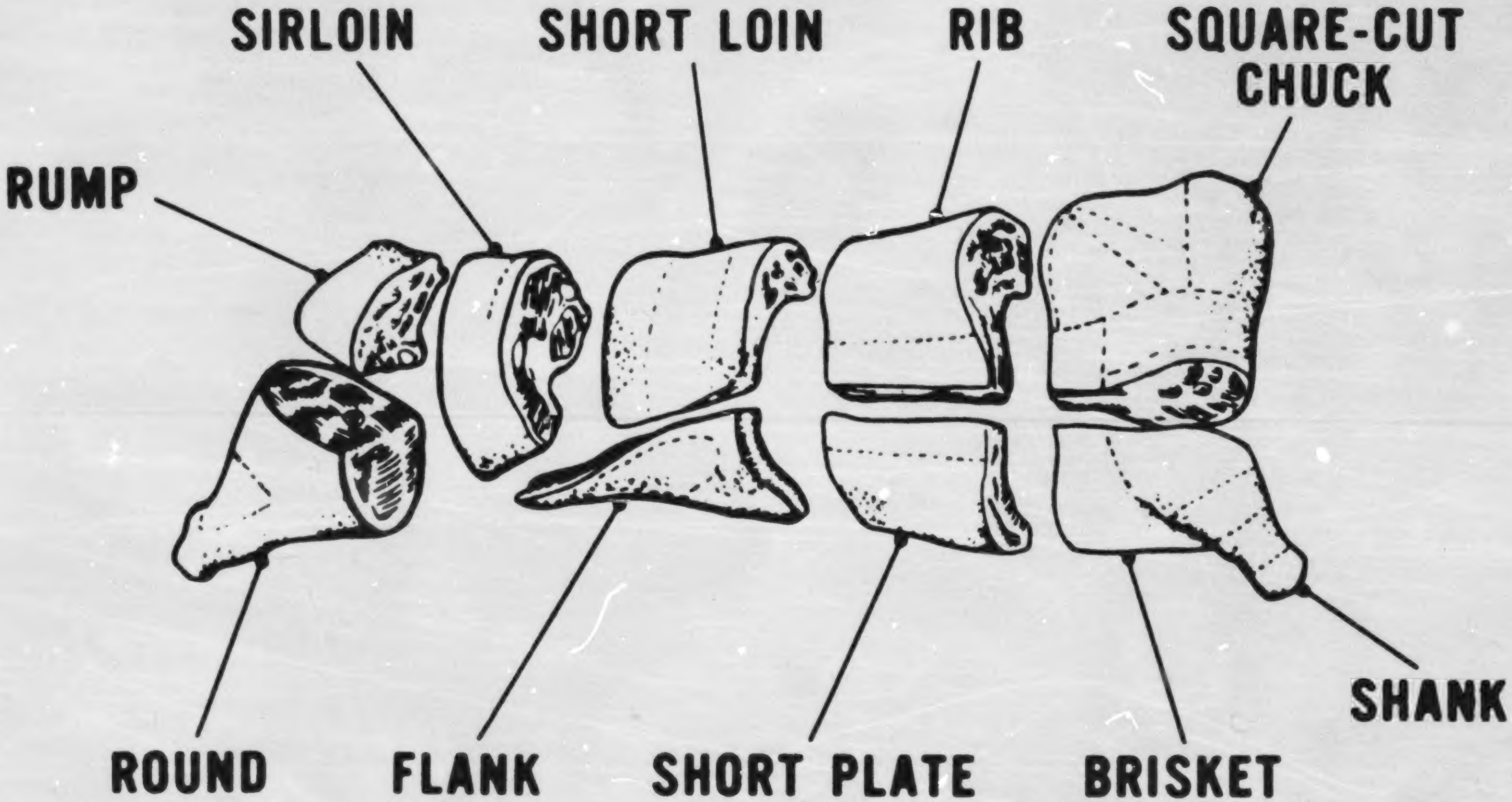
E. When milk comes into contact with a corroded metal; rusty milk can lids.

F. Characteristic of a cow with infected milk glands (otherwise known as mastitis).

G. From stagnant feed, water or moldy hay consumed by cow.

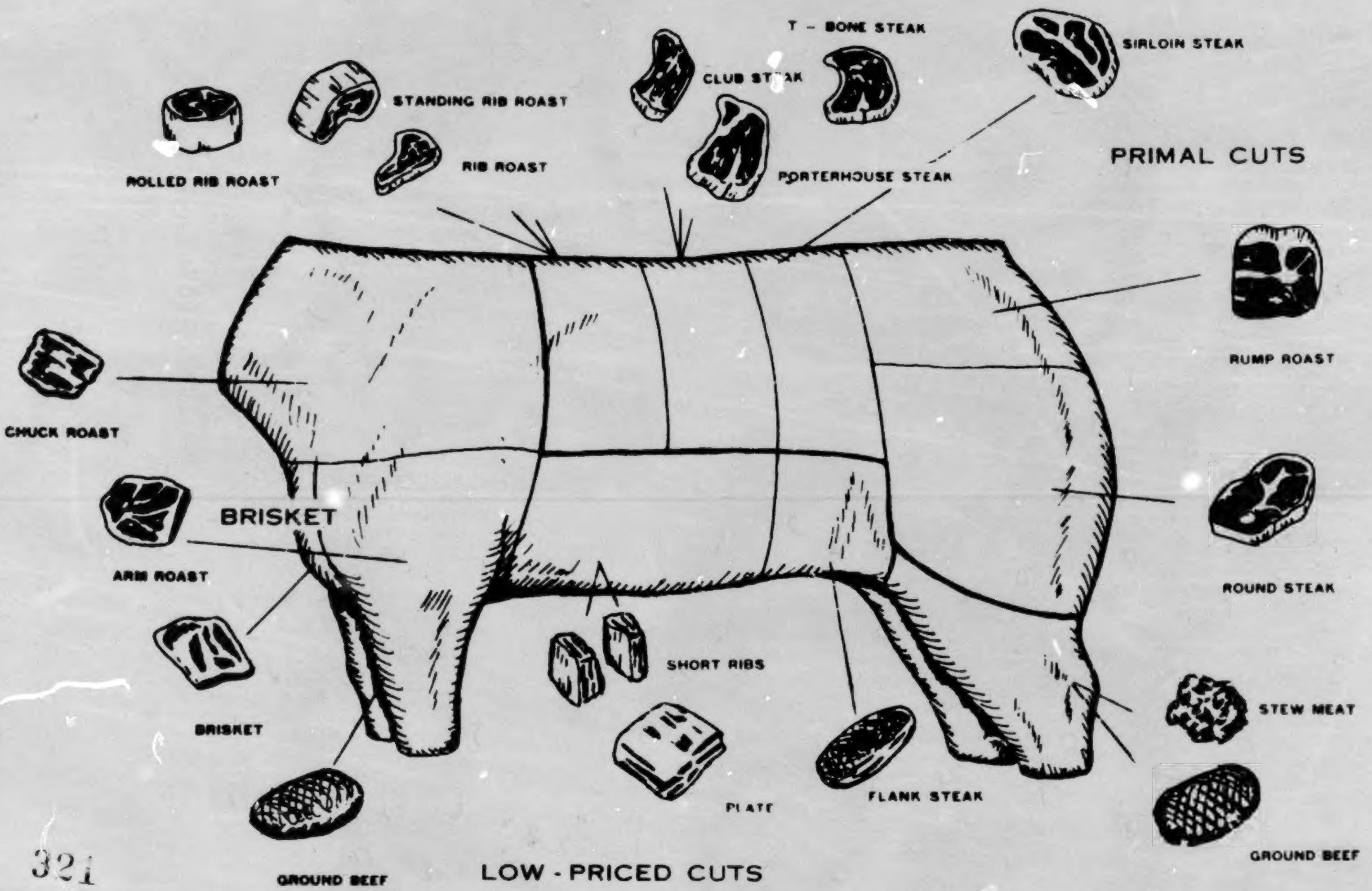
H. Certain bacteria from improperly cleaned milking equipment.

BEEF CUTS CHART


SIRLOIN
SHORT LOIN
RIB
SQUARE-CUT CHUCK
RUMP
ROUND
FLANK
SHORT PLATE
BRISKET
SHANK

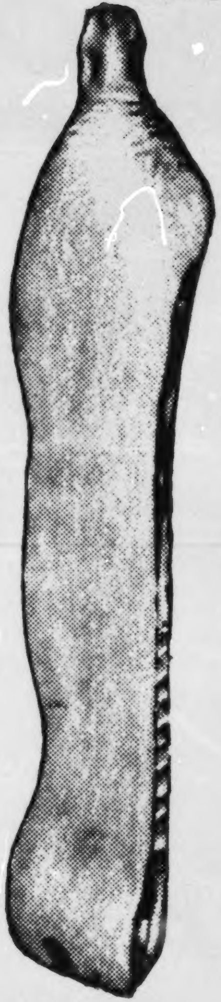
II-D-3-35

WHOLESALE CUTS OF BEEF

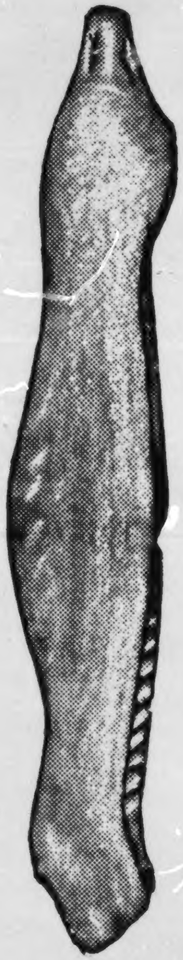

T - BONE STEAK
SIRLOIN STEAK
CLUB STEAK
STANDING RIB ROAST
ROLLED RIB ROAST
RIB ROAST
PORTERHOUSE STEAK
PRIMAL CUTS
RUMP ROAST
CHUCK ROAST
BRISKET
ARM ROAST
ROUND STEAK
SHORT RIBS
STEW MEAT
BRISKET
FLANK STEAK
PLATE
GROUND BEEF
GROUND BEEF
LOW - PRICED CUTS

BEEF CARCASS CONFORMATION

BACK VIEW

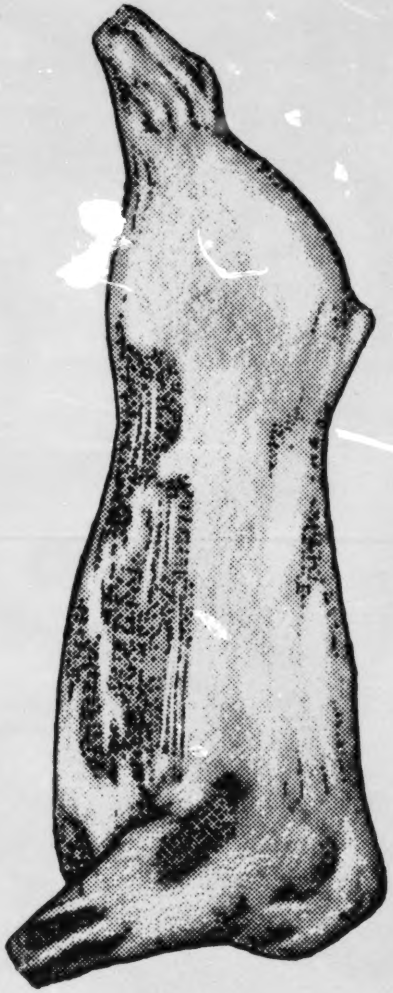


IDEAL

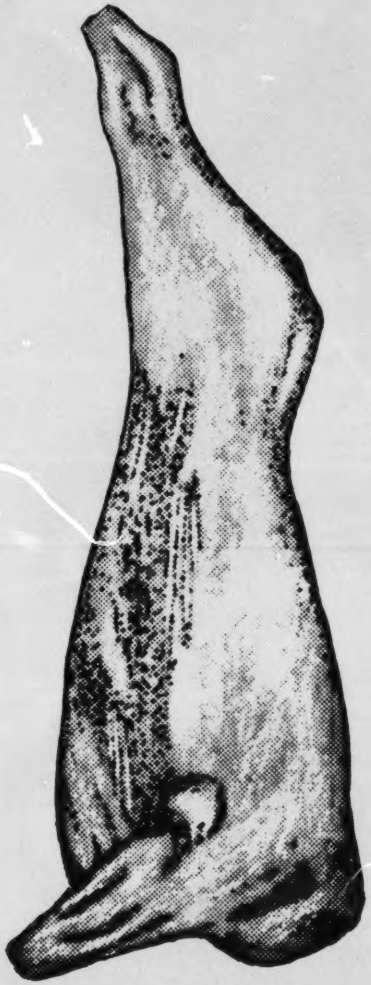


POOR

SIDE VIEW



IDEAL

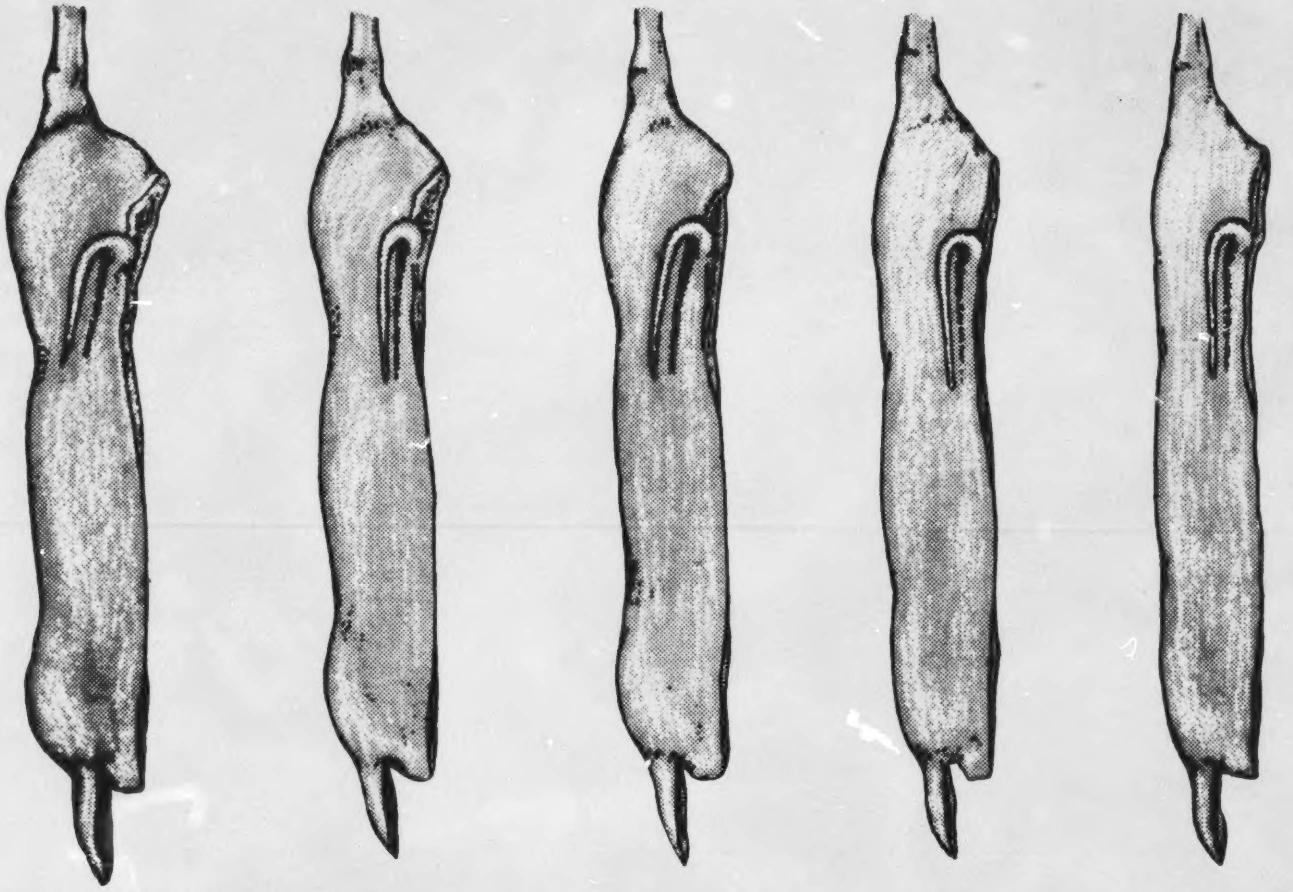


POOR

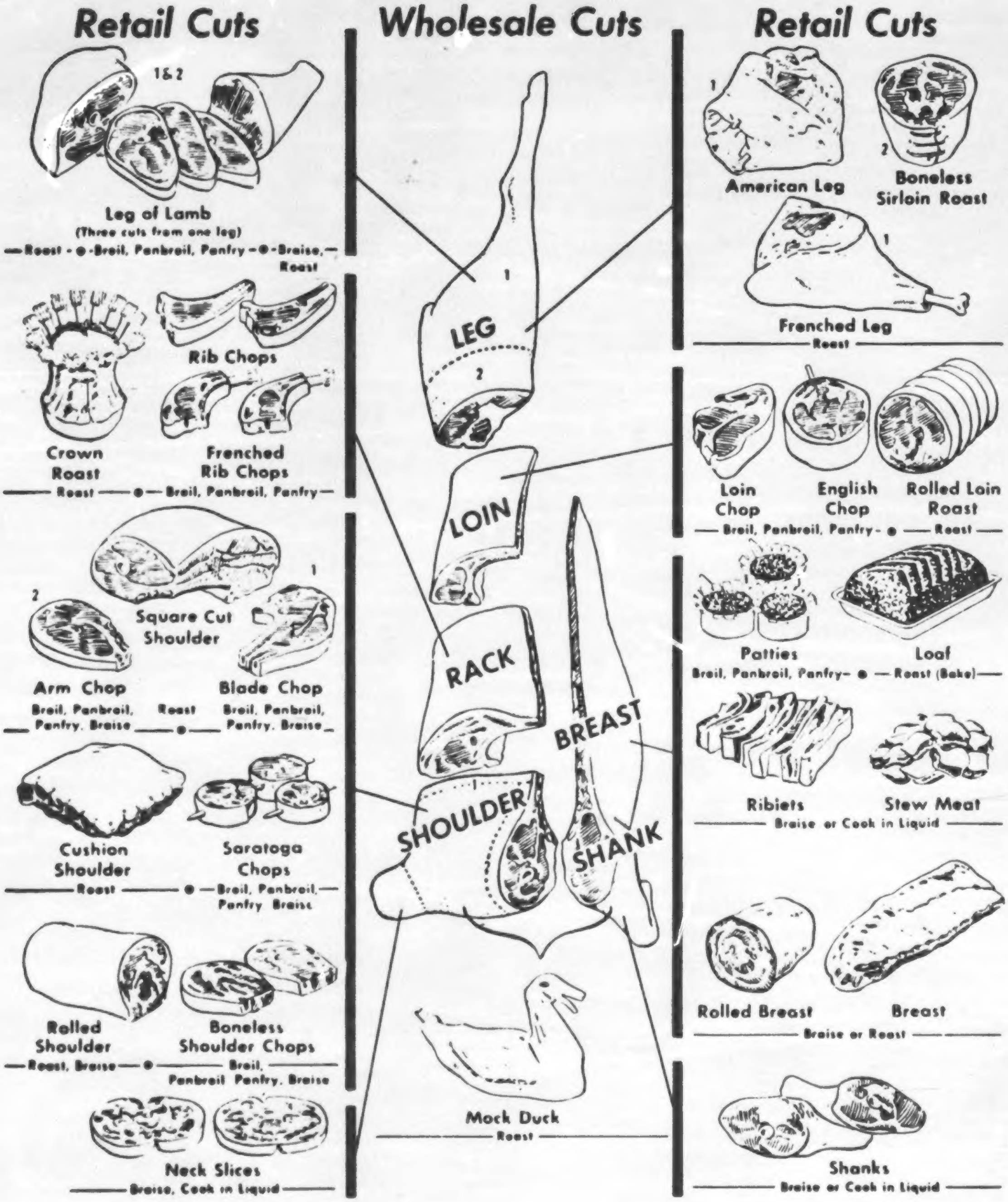
COLOR AND FIRMNESS OF MEAT GRADES

	NORMAL FIRMNESS (LEAN)		NORMAL COLOR (LEAN)	
Grades	Young	Old	Young	Old
PRIME	Medium Firm	Firm	Light Red	
CHOICE	Slightly Soft	Slightly Firm	Medium Light Red	
GOOD	Medium Soft	Slightly Soft	Slightly Light Red	
STANDARD	Soft	Medium Soft	Slightly Dark Red	
COMMERCIAL	Slightly Firm	Firm	Medium Dark Red	Dark Red
UTILITY	Soft and Slightly Watery		Slightly Dark Red	Very Dark Red

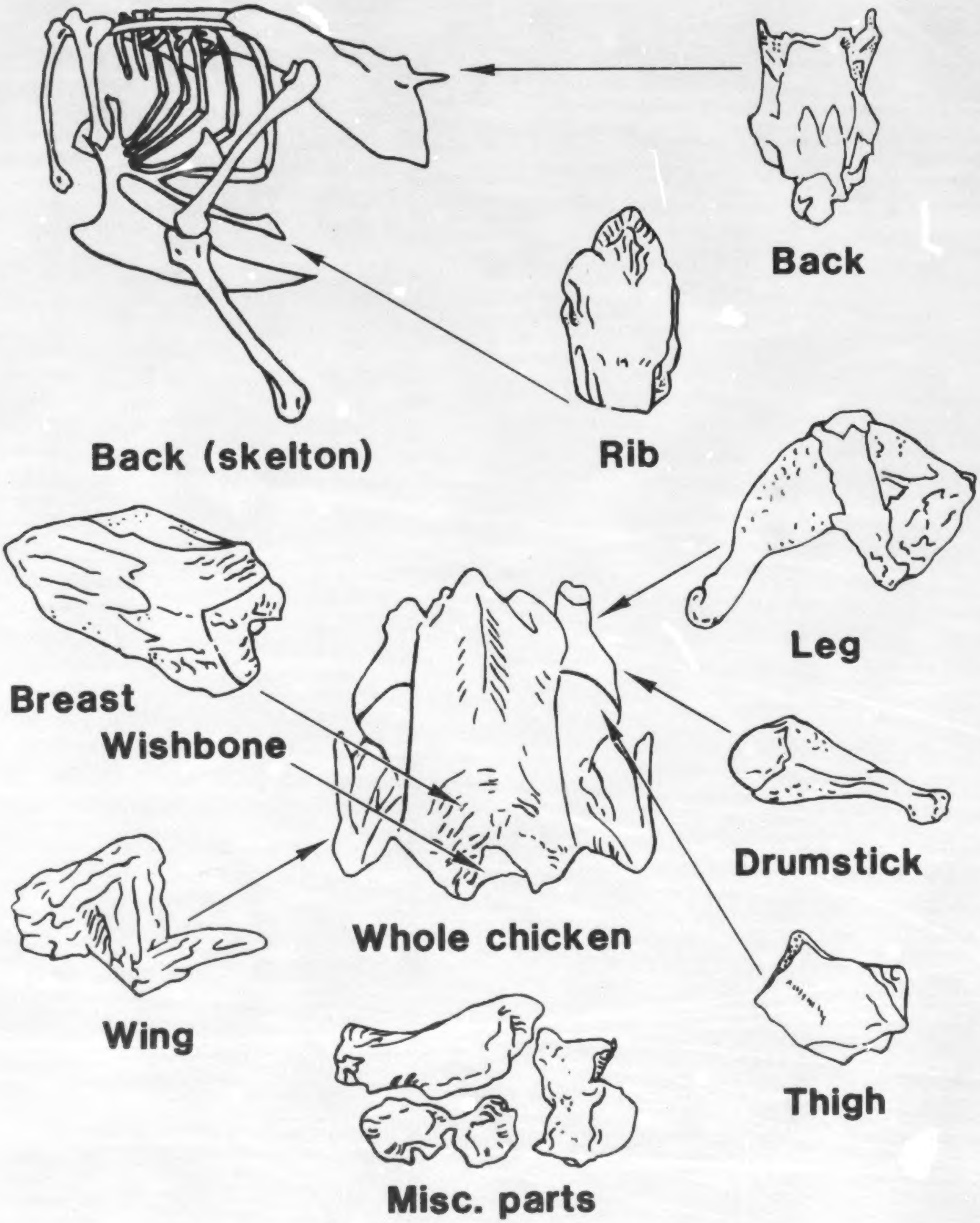
DEGREES OF MUSCLING IN SWINE CARCASSES


VERY THICK
THICK
MODERATELY THICK
SLIGHTLY THICK
THIN

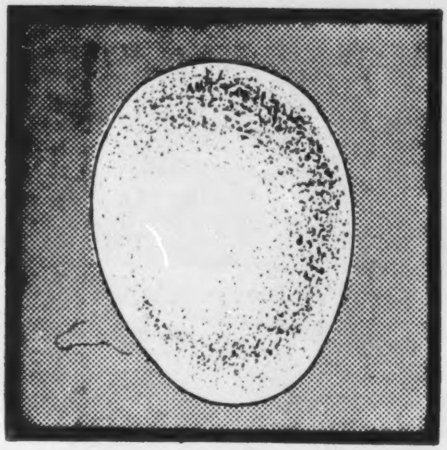
LAMB CHART


Retail Cuts
Wholesale Cuts
Retail Cuts
1&2
Leg of Lamb
(Three cuts from one leg)
—Roast - ● -Broil, Panbroil, Panfry — ● -Braise, Roast—
Rib Chops
Crown Roast
Frenched Rib Chops
—Roast — ● — Broil, Panbroil, Panfry—
2
1
Square Cut Shoulder
Arm Chop
Blade Chop
Broil, Panbroil, Panfry, Braise — Roast — ● — Broil, Panbroil, Panfry, Braise
Cushion Shoulder
Saratoga Chops
—Roast — ● —Broil, Panbroil, Panfry Braise—
Rolled Shoulder
Boneless Shoulder Chops
—Roast, Braise — ● — Broil, Panbroil Panfry, Braise—
Neck Slices
—Braise, Cook in Liquid—
1
LEG
2
LOIN
RACK
BREAST
SHOULDER
SHANK
1
2
Mock Duck
—Roast—
1
American Leg
2
Boneless Sirloin Roast
1
Frenched Leg
—Roast—
Loin Chop
English Chop
Rolled Loin Roast
—Broil, Panbroil, Panfry - ● — Roast—
Patties
Loaf
Broil, Panbroil, Panfry- ● —Roast (Bake)—
Ribiets
Stew Meat
—Braise or Cook in Liquid—
Rolled Breast
Breast
—Braise or Roast—
Shanks
—Braise or Cook in Liquid—

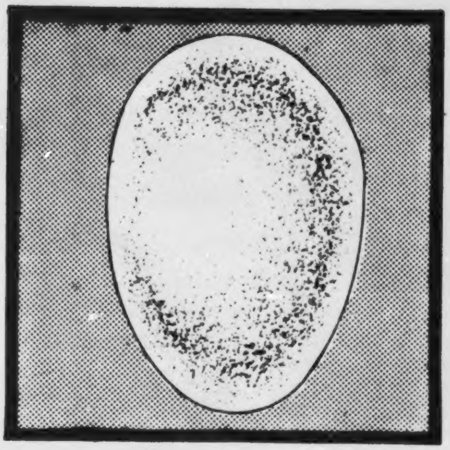
CHICKEN PARTS


Back
Back (skelton)
Rib
Leg
Breast
Wishbone
Drumstick
Wing
Whole chicken
Thigh
Misc. parts

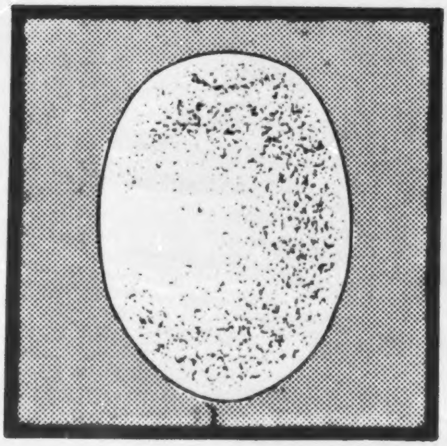
SHELL SHAPES



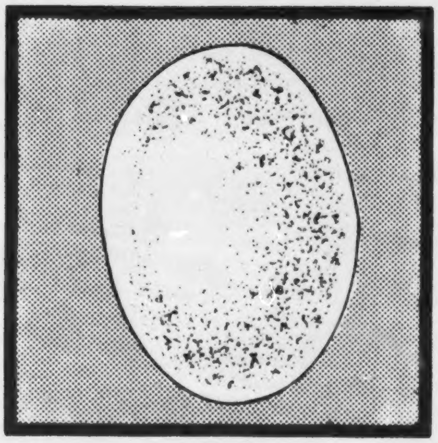
Ideal Egg Shape



Practically Normal Shape
AA or A Quality



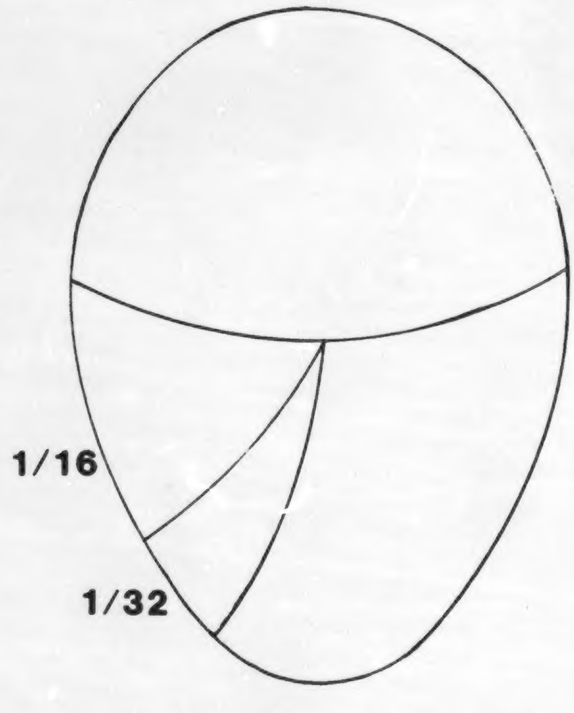
Slightly Abnormal Shape
B Quality



Abnormal Shape
C Quality

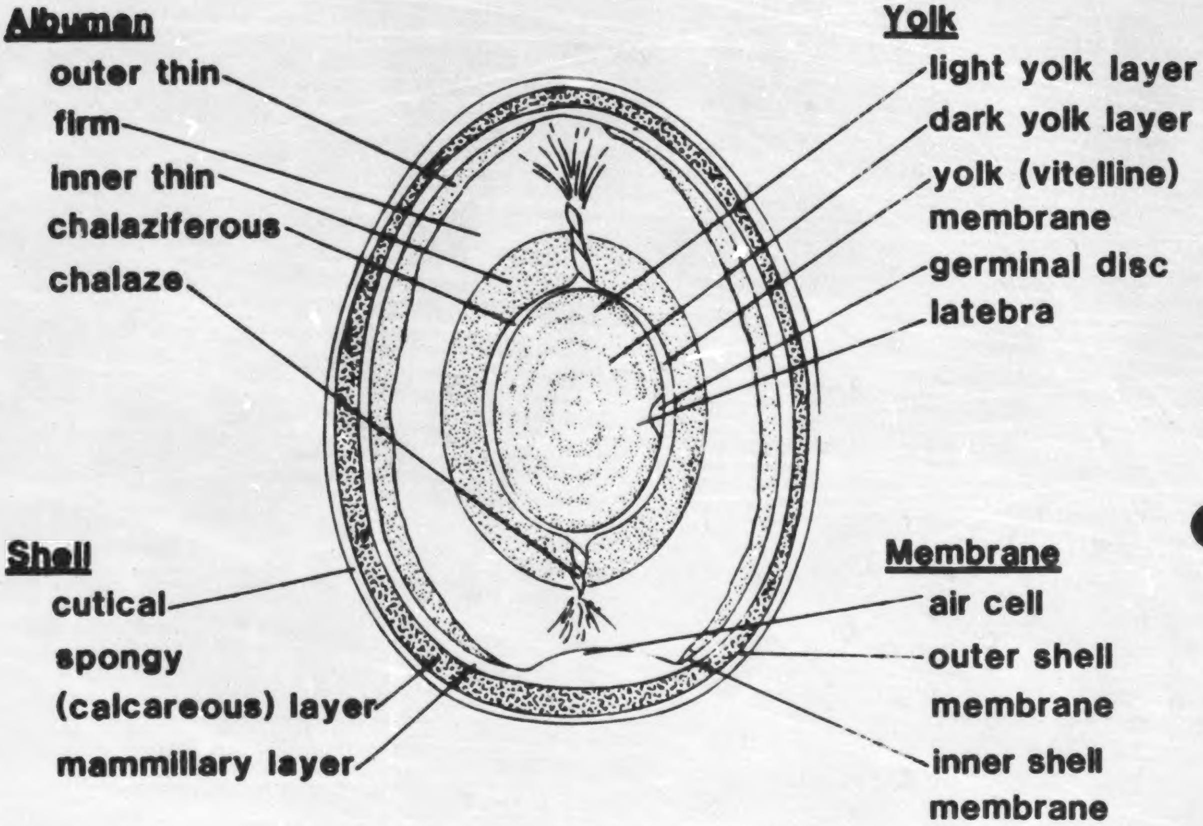
An Egg Showing The Actual Size Of Stain And Dirt

1/32, 1/16, and 1/4 of shell surface of an egg

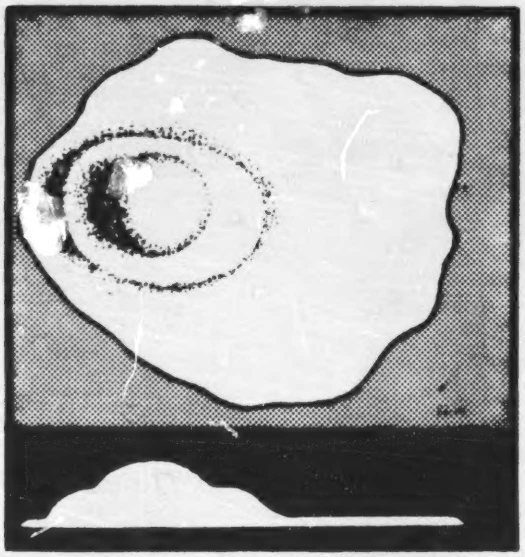


1/4 of shell surface of an egg (one side)

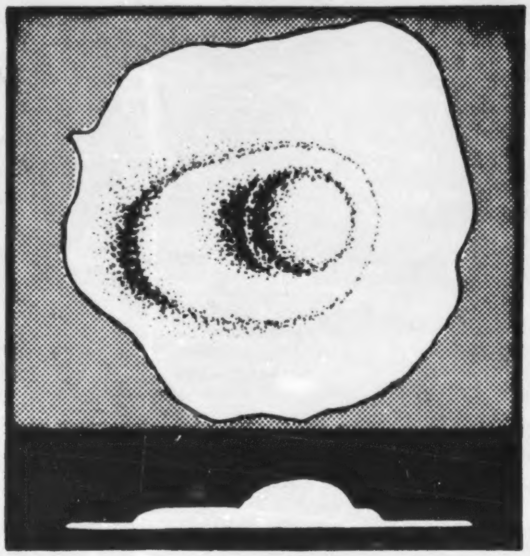
PARTS OF AN EGG


Albumen
outer thin
firm
inner thin
chalaziferous
chalaze
Yolk
light yolk layer
dark yolk layer
yolk (vitelline) membrane
germinal disc
latebra
Shell
cutical
spongy (calcareous) layer
mammillary layer
Membrane
air cell
outer shell membrane
inner shell membrane

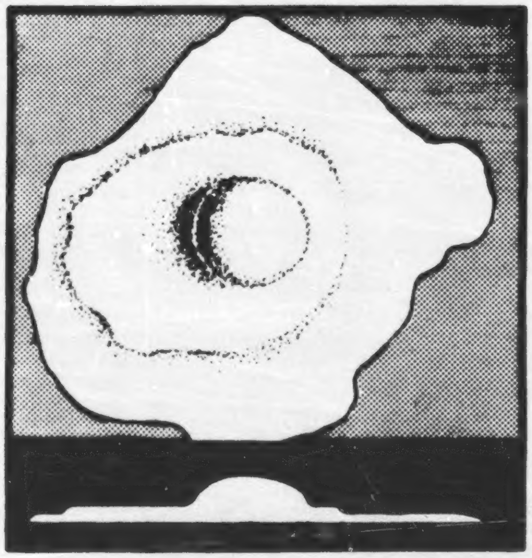
EGG BREAK-OUT QUALITIES



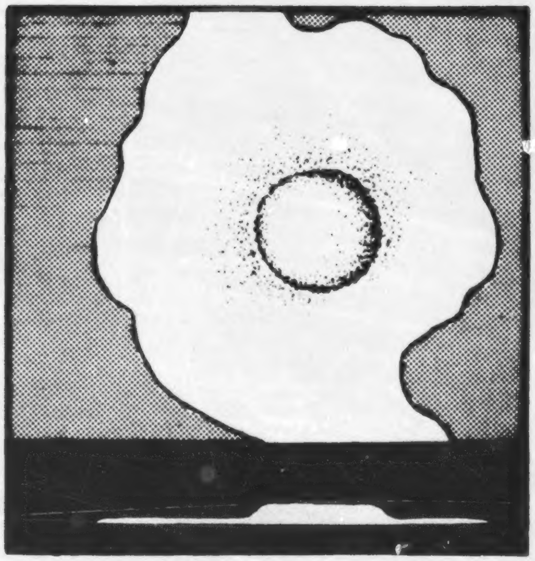
High "AA" or Fresh Fancy



Average "A"



Average "B"



Low "C"

TRANSPARENCY DISCUSSION GUIDE

JUDGING AND EVALUATING MEAT AND LIVESTOCK PRODUCTS

I. Transparencies: BEEF CUTS CHART AND WHOLESALE CUTS OF BEEF

A. Discuss the importance of identifying and learning where the wholesale (primal) and retail cuts of beef are located on a carcass.

B. Identify the wholesale cuts which are considered high priced cuts: rib, loin, and round.

C. Identify the low priced cut areas: forequarters, brisket, plate, belly, and flank.

II. Transparency: BEEF CARCASS CONFORMATION

A. Point out how carcasses with good conformation will yield a high percentage of high priced cuts and a small percentage of low priced cuts.

B. Have students describe the characteristics of the ideal carcass and the poor carcass.

III. Transparency: COLOR AND FIRMNESS OF MEAT GRADES

A. Discuss the characteristics of firmness in young and old beef when comparing prime through utility grades.

B. Discuss the color of young and old beef when comparing prime through utility grades.

C. Use color slides or actual cuts of beef, if possible, to clarify the differences in firmness and color.

IV. Transparency: DEGREE OF MUSCLING IN SWINE CARCASSES

A. The degree of muscling specified for a carcass decreases progressively from U. S. No. 1 to U. S. No. 4.

B. Among carcasses of same weight, fatter ones will have less muscling than leaner ones.

C. The degrees of muscling for grades 1 through 4 are: thick, moderately thick, slightly thin, and thin.

D. Have students give oral reasons for placing each of the four carcasses in the transparency.

V. Transparency: LAMB CHART

A. Discuss the wholesale (primal) cuts of a lamb carcass.

B. Point out the retail cuts which come from the primal areas.

C. Point out the high priced cut areas of leg, loin, and rack.

D. A high quality lamb carcass is highly marbled, has a general firmness, and is covered with a uniform white, firm fat.

VI. Transparency: CHICKEN PARTS

A. Have students name the major cuts of poultry. Then have them visually identify the parts.

B. Discuss the desirable characteristics of a ready-to-cook carcass.

C. Point out the criteria which are used to determine the grade of a ready-to-cook carcass.

D. Let students practice grading carcasses and cutting up carcasses into the various parts.

VII. Transparency: SHELL SHAPES

A. An "ideal" egg shape is oval with one end larger and tapering toward the smaller end. Test measurements of both strength and appearance resulted in the development of an ideal egg shape.

B. Eggs can vary slightly from the ideal and still be within an AA or A grade.

C. Eggs of an unusual shape, ridges, rough areas, thin spots, shell checks, or cracks are placed in lower grades.

D. Slightly abnormal can show a somewhat unusual shape and be slightly faulty in texture or strength.

E. Abnormal shows pronounced ridges, thin spots or rough areas.

VIII. Transparency: EGG STAIN AND DIRT

A. A shell free of foreign material, stains, or discolorations are considered clean.

B. Slightly stained (B quality) is a 1/32 localized stain or 1/16 scattered stain.

C. Stains covering more than 1/16 are graded as C quality.

D. A dirty grade has more than 1/4 of the shell surface with adhering dirt, prominent stains, or moderate stains.

IX. Transparency: PARTS OF AN EGG

A. Use real eggs along with this transparency to identify the four major parts of an egg.

B. Discuss the common defects to look for when grading the interior egg, such as, blood spots, meat spots, size of air cell, etc.

C. Point out how these defects affect quality and value.

X. Transparency: EGG BREAK-OUT QUALITIES

A. Point out that the major factors to consider are the amount or height of the thick albumen, shape of yolk, freedom from defects.

B. AA grade eggs have a compact, thick albumen and firm high yolks.

C. Grade A eggs have slightly thick albumen and are somewhat thin. The yolk stands fairly high.

D. Grade B eggs flatten over a wide area, smaller amount of thick albumen and the yolk is flattened and enlarged.

E. Grade C eggs have almost no thick albumen and the yolks are very flat and enlarged and tend to break easily.

F. Inedibles contain blood or meat spots on the yolk or in the albumen.

G. Discuss the causes of these changes in eggs and how these grades are important to a consumer.

Teacher's Key

Sample Test Questions

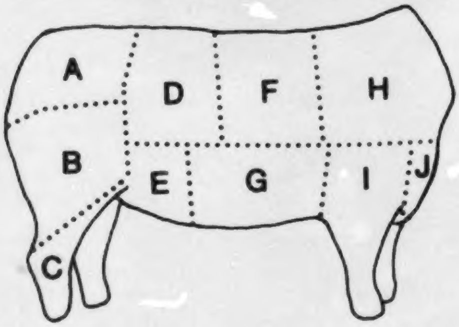
Judging and Evaluating Meat and Livestock Products

1. Match the terms on the right with the correct definitions:

3 A. Wholesale cuts
7 B. Marbling
1 C. Grade
2 D. Finish
4 E. Quality
6 F. Feathering
5 G. Cutability

1. Measure of carcass's degree of excellence based on conformation, finish, quality.
2. Refers to the amount, quality and distribution of fat.
3. The parts at which the carcass is separated for selling purposes.
4. Refers to the eating quality of meat as indicated by characteristics of the fat and lean tissue, bone and marbling.
5. The portion of the carcass that is salable as trimmed retail cuts.
6. The internal fat deposited between the ribs on the internal carcass. An abundance of feathering indicates an abundance of marbling.
7. Flecks or streaks of intramuscular fat throughout the lean which denotes tenderness.

2. Label the drawing below indicating the wholesale cuts of beef:

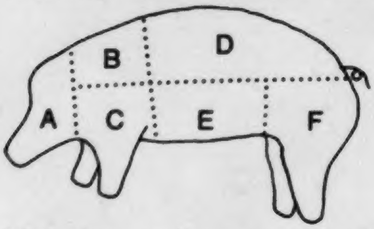


A. Rump
B. Round
C. Hind Flank
D. Loin
E. Flank
F. Ribs
G. Plate
H. Chuck
I. Foreshank
J. Brisket

3. List the quality grades for beef:

A. Prime
B. Choice
C. Good
D. Standard
E. Utility
F. Commercial
G. Cutter
H. Canner

4. Identify the wholesale cuts of pork from the drawing below:

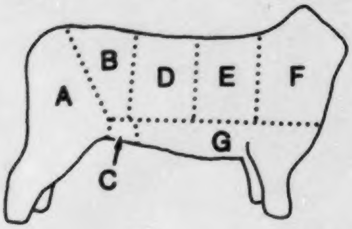


A. Jowl
B. Boston butt
C. Picnic
D. Loin
E. Side
F. Ham

5. List the quality grades of pork:

A. U.S. No. 1
B. U.S. No. 2
C. U.S. No. 3
D. U.S. No. 4
E. Utility

6. Identify the wholesale cuts of lamb from the drawing below:



A. Leg
B. Sirloin
C. Flank
D. Loin
E. Rack
F. Square cut
G. Breast

7. Place the lamb market grades below in order from best to poorest:

A. Choice	A. Prime
B. Utility	B. Choice
C. Prime	C. Good
D. Good	D. Utility

8. Match the primal cuts on the right to the retail cuts of beef:

_6_ a. Stew meat
_8_ b. Short ribs
_3_ c. Sirloin steak
_1_ d. Chuck roast
_2_ e. T-bone steak
_9_ f. Arm roast
_8_ g. Plate
_5_ h. Round steak
_4_ i. Liver
_9_ j. Brisket
_7_ k. Flank steak

_2_ l. Porterhouse steak
_2_ m. Club steak
_6_ n. Ground beef

1. Chuck
2. Rib
3. Loin
4. Variety meats
5. Round
6. Shank
7. Flank
8. Plate
9. Foreshank and brisket

9. Match the primal cuts on the right to the basic retail cuts of pork.

a. 6 Boston roast
b. 3 Tenderloin
c. 5 Bacon
d. 3 Loin chop
e. 4 Ham roast
f. 3 Sirloin roast
g. 6 Arm roast
h. 2 Sausage
i. 6 Picnic
j. 6 Arm steak

k. 6 Blade steak
l. 3 Rib chop
m. 3 Canadian bacon
n. 3 Center rib roast
o. 4 Ham (butt half)
p. 4 Ham (shank half)
q. 5 Spareribs

1. Variety meats
2. Various
3. Loin
4. Leg (Ham)
5. Side
6. Shoulder

10. Match the wholesale cuts on the right to the basic retail cuts of lamb:

1 a. Square cut
5 b. Frenched style
1 c. Arm chop
5 d. Sirloin half
5 e. Center slice
6 f. Ground lamb patties
4 g. Rib chop

1 h. Blade chop
4 i. Rib roast
2 j. Brains
2 k. Sweetbreads
5 l. American style
3 m. Loin chop
5 n. Sirloin chop

1. Shoulder
2. Variety meats
3. Loin
4. Rib
5. Leg
6. Various cuts
7. Shank

Answer True-False

T 11. The last area to bleach on a chicken is the hock joint.

T 12. A B-quality, ready-to-cook chicken may have two disjointed bones.

F 13. The vent is dry when a chicken is in production.

F 14. An A-quality ready-to-cook dressed bird may have one broken bone.

F 15. An egg's shell that is cracked, but in which the shell membrane is still intact, is called a leaker.

F 16. All B-quality eggs have an air cell that is over 3/8 inch in depth.

T 17. A freshly laid egg has no air cell.

F 18. Bleaching of the beak starts at the tip and progresses toward the base of the beak.

F 19. A non-layer will have white to pink colored shanks.

T 20. A bird in production will have large bright red comb and wattles.

Multiple Choice

D 21. When a hen bleaches as a result of continuous laying, the first area of her body to become bleached is the

(a) beak.
(b) eye ring.
(c) feet.
(d) vent.

B 22. Grade AA eggs should have

(a) 3/8 inch.
(b) 1/8 inch or less.
(c) more than 3/8 inch.
(d) ½ inch air cell size.

A 23. When a hen bleaches as a result of continuous laying, the last area of her body to become bleached is the

(a) beak.
(b) eye ring.
(c) earlobe.
(d) vent.

D 24. The comb of a nonlaying hen will be

(a) glossy.
(b) large.
(c) deep red.
(d) contracted.

SAMPLE TEST QUESTIONS

MILK & CHEESE

1. Name two semisoft cheese types.

   A. Brick
   B. Muenster

2. What are five off-flavors that can be found in milk?

   A. Bitter
   B. Flat
   C. Garlic
   D. Metallic
   E. Musty

3. What are the blue veins in Bleu cheese due to?

   A. Mold activity

4. What type of bacteria cause acidity in cheese?

   A. Lactic-acid producing bacteria

5. What are four milk products besides cheese?

   A. Yogurt
   B. Butter
   C. Sour Cream
   D. Dry Milk

6. Milk is an excellent source of protein. Name three essential nutrients that can be found in milk.

   A. Riboflavin
   B. Calcium
   C. Vitamin A

7. What are the milkfat and solids-not-fat contained in the following.

		Milk fat	Solids-not-fat
A.	Whole milk	3.25%	8.25%
B.	Lowfat milk	2.00%	8.25%
		1.50%	8.25%
		1.00%	8.25%
C.	Skim milk	0.50%	8.25%

8. What vitamin is milk mandatorily fortified with and in what quality?

   A. Vitamin A, 2000 IU/quart

9. Why is Parmesan cheese covered with a brown or black coating?

   A. To prevent mold growth and drying out of the cheese

10. What process is first - homogenization or pasteurization?

    A. Pasteurization is first, then homogenization, if wanted. Homegenization is optional.

TRUE-FALSE SECTION

+ = True
0 = False

__0__ 1. Swiss cheese eyes are due to human error during processing.

__+__ 2. Curd and whey are separated during cheese processing.

__0__ 3. Homogenization alters the food value of milk.

__+__ 4. Pasteurization effectively destroys impurities in milk.

__+__ 5. Calcium is an essential nutrient that can be found in milk.

__+__ 6. Riboflavin is an essential nutrient found in milk.

__0__ 7. Calcium does not aid in maintenance of bones and teeth.

__0__ 8. Riboflavin primarily aids in blood clotting.

__0__ 9. Chocolate milk can be processed into chocolate cheese.

__+__ 10. Milk transport from the farm to the family table is under a great deal of control.